THESIS

A PROJECT IN THE DICTATION OF MUSIC

Frank T. Peckham
Master of Music Education
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Boston University
College of Music

Thesis

" A Project in the Dictation of Music"

(To be given to groups selected from Grades Four, Five, and Six, in order to determine whether or not groups approximately equal in music reading ability would, or would not, be aided to greater music reading skill by the inclusion of drill exercises in music dictation.)

by

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requirements for the degree of
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Introduction

A great deal of argument has been offered, in recent years, to the effect that music education in the past has been handicapped and allowed to deteriorate as a result of excessive formal drill in note-reading and in technical skill. Music reading procedures have become the battleground upon which have been fought the many conflicting theories underlying what makes for musical "awareness", and musical sufficiency.

The ability to read music notation is essential to complete understanding of the printed page. We must not detract from the importance of reading skill. But, in the past, over-zealous music educators have admittedly drilled note-reading to excess, resulting in a growing resentment on the part of the pupil toward music in general. We must, therefore, devise some other teaching advice which may supplement, but not substitute for, the actual usage of the score in learning to read music. A project in music dictation may be one means of obtaining a better concept of the notation, through mental image, without the pressure of extended formal drill.

Music dictation can become an instrument for drilling, through actual usage, the staff, the G clef, signatures of time and key, and the various note values which make up our

system of music notation. Moreover, the ear-training which would result from drill in music dictation should aid materially in a better concept of the written score.

It is, therefore, the purpose of this thesis to show that skill in music reading can be improved through the use of music dictation.

Proposal

It was proposed that a project in the dictation of music be given to selected classes in Grades Four, Five, and Six, to determine whether or not groups approximately equal in music reading ability would, or would not, be aided to greater music reading ability by the inclusion of drill exercises in music dictation.

It was further proposed, in order to arrive at a definite conclusion, that there be selected and paired off, as equitably as possible for laboratory purposes, six sections of Grade Four, six sections of Grade Five, and six sections of Grade Six. Three sections of each grade were to be exposed to prescribed problems in music dictation; the remaining three sections of each grade were not to be so exposed.

In order to select those sections of each grade which would be equitably paired with each other, the procedure was as follows:

1. Test each group individually for sight-reading ability, using easy music reading material.

2. Enumerate the good, average, and poor readers in each grade.

3. Select, and pair off, those three sections of each grade which would compare as nearly equitably as possible.

If any discrimination should be considered necessary, let it be on the side of the weaker group; that is, in order to determine significant improvement in score-reading ability, it would be justifiable to expose that group which was comparatively weaker, where the situation was found necessary or unaviodable.

Evaluation of note-reading ability was based on the following criteria:

1. Good readers made not more than one mistake.
2. Average readers were allowed two to three mistakes.
3. Poor readers needed continual help to enable them to keep going.

This same standard of evaluation was used in a final re-check at the close of the dictation project, to determine any improvement in score-reading ability.

The project, with all its steps, was carried out in the author's own schools, with the full co-operation of partici-teachers and the administrative staff.

Technical Preparation

When the three experimental sections of each grade had been selected, as previously explained, the following procedure was followed:

1. Allow the remaining three sections of each grade not selected for laboratory purposes (hereafter to be termed the "control group") to continue in its normal music activity.

2. Prepare the experimental group for the testing period, as follows:

   a. Allow a two-week period of preliminary instruction and drill in music dictation, both on stafflined paper to be used at the pupils' desks, and by voluntary demonstration going on simultaneously at the blackboard.

   b. Provide the teacher in each experimental classroom with definite instructions for recommended procedure, and also sufficient drill material to cover a period of twenty weeks.

   c. Provide, from time to time, enough staff-lined paper for pupil use in the daily drill of music dictation.

Procedure for daily drill

Approximately one month following the opening of the school year 1948-49, or after sufficient time had elapsed in which to determine the comparative reading abilities of each of the chosen grades, preliminary instruction was given to that total section of the grades selected for testing, in order to orient the pupils in the techniques of music dictation. The purpose of the orientation period was to acquaint the pupils with the problems of correct representation of note values, measure-lines, signatures of time and key, and any other information pertinent to the project.

When it was determined that the techniques of music writing were clearly understood, a series of progressively difficult dictation problems, suitable to each grade, was presented to each section of the experimental group. These problems were in two forms:

1. Daily drill material, administered by the classroom teacher.

2. Bi-weekly test material, administered by the writer of this thesis.

The dictation exercises used, both for daily drill and for bi-weekly testing, were prepared and made available by the author, and were not taken from any published sources.

Content of the daily drill material

The daily drill material, to be left with the classroom teacher, provides for approximately one exercise to be given each day over a period of twenty school weeks. The construction of the drill problems is as follows:

Grade Four

80 problems:

1. 40 with no melodic skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
2. 40 with "Tonic" chord skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

Grade Five

80 problems:

1. 20 with no melodic skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
2. 20 with "Tonic" chord skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
3. 10 with no melodic skips, adding ♫
4. 10 with "Tonic" chord skips, using ♫, ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
5. 20 starting on "mi", or "sol", using ♫, ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

Grade Six

80 problems:

1. 10 with no melodic skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
2. 10 with no melodic skips, adding ♫
3. 10 with "Tonic" chord skips, starting on "mi" or "sol", using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

4. 10 with "tonic" chord skips, starting on "mi" or "sol", adding ♫

5. 10 with no melodic skips, using ♩. ♪

6. 10 with "Tonic" chord skips, starting on "Mi" or "sol", using ♩. ♪

7. 10 with skips of the "Dominant" chord, using only ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

8. 10 with skips of the "Dominant" chord, using all previous rhythms.

Instructions to classroom teachers

The following instructions were given to classroom teachers, and are here outlined.

A Project in the Dictation of Music

The daily drill material is intended to cover a period of twenty school weeks, and is set up to provide four exercises for each school week. If you do not complete all four exercises during any particular week, please go on to the next four, as test-problems, given by the supervisor, will be constructed on a progressive basis, one test-problem for each of the weekly drill units.

Procedure

1. a. Provide all pupils with staff-lined paper.
   b. Assign four or five pupils to work simultaneously at the blackboard. (Pupils who work at the board must make their own staff with staff-liner.
2. Teacher instruct the pupils:
   a. To make G. clef.
   b. Proper location of each sharp or flat in the key signature.
   c. Proper Time Signature for each problem.
   d. To determine the location of "Do".
   e. Place a check-mark (x) where "Do" is.

f. To put pencils down, and listen.

3. Teacher will indicate:

   a. Rhythm speed (slow quarter-note reading speed).

   b. The sound of "Do".

4. a. Teacher will sing the complete melody, using a neutral syllable "Loo", in a soft, sustained, but rhythmical manner. If the problem is long, sing ("Loo") the first half a second time.

   b. Pupils think the syllable names, and rhythm, of the first half of the melody; write same.

   c. Teacher sing ("Loo") second portion of melody.

   d. Pupils think syllable names, and rhythm of second portion; write same.

   e. Teacher repeat entire melody, pupils check their work.

   f. Teacher should not sing the problem more than five times.

5. a. Pupils correct their own daily drill exercises, either from an approved version at the blackboard, or from information given by the teacher. (The teacher is not expected to make daily formal corrections.)

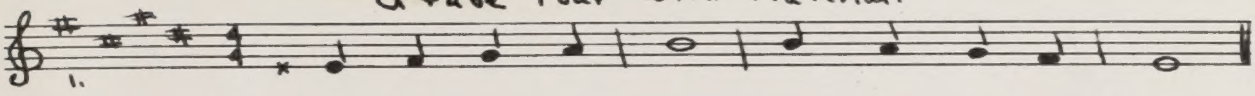
   b. Try to keep the time for daily dictation drill to a maximum of five or six minutes for one daily exercise; in order not to handicap the regular music program.

Daily Drill Exercises in Music Dictation

Grade Four

(For use by the classroom teacher)

Grade Four Drill Material.



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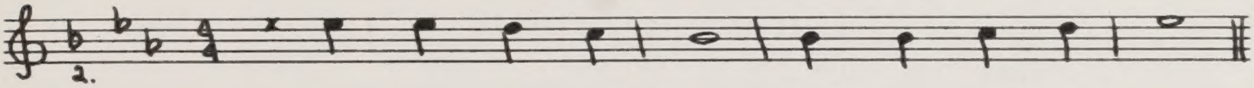

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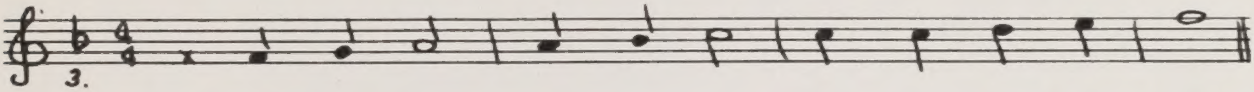

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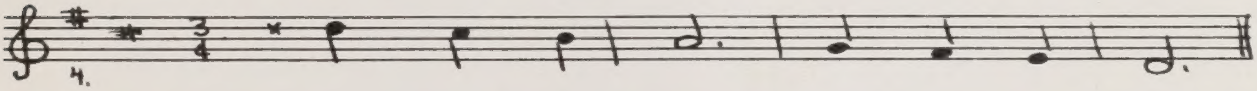

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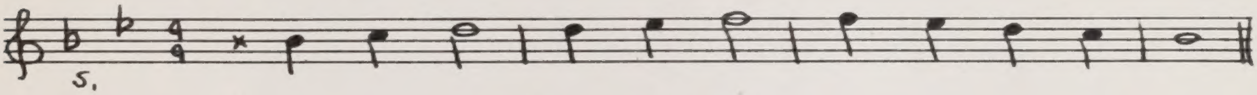

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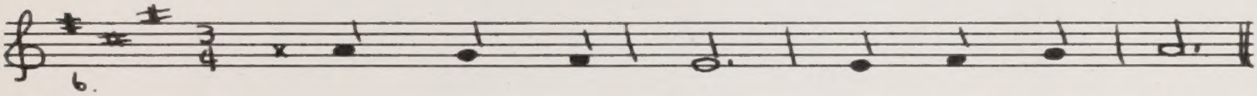

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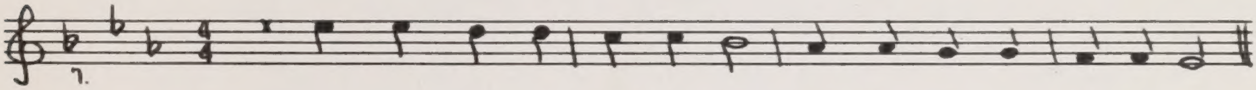

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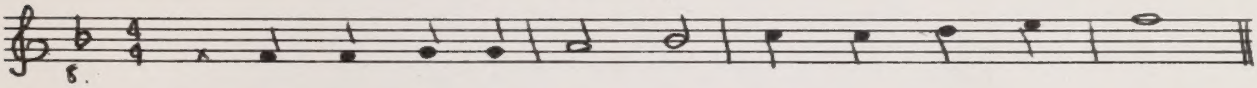

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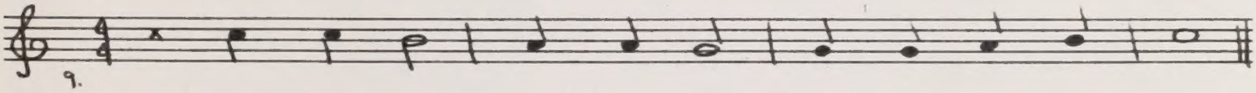

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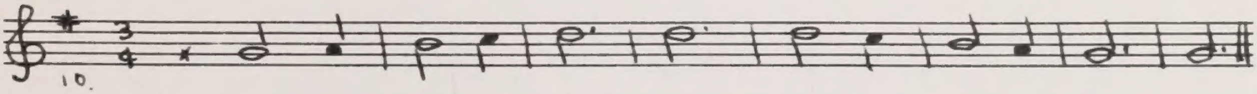

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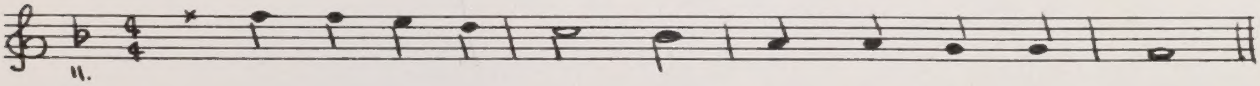

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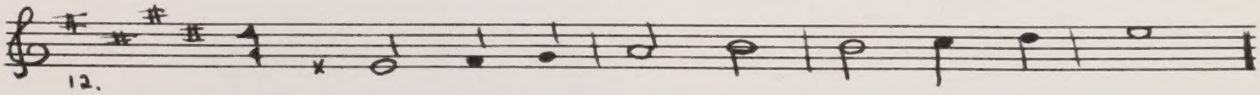

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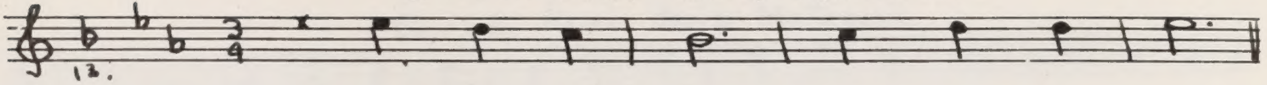
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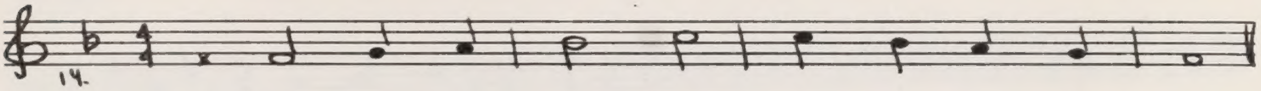
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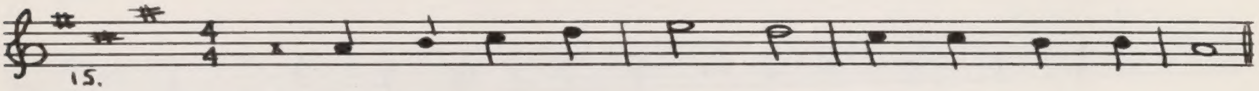
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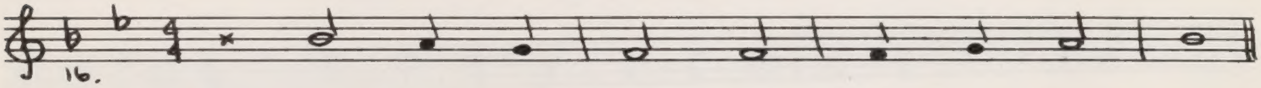
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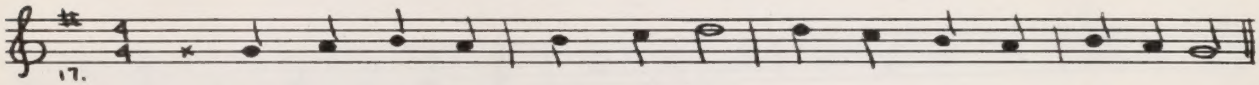
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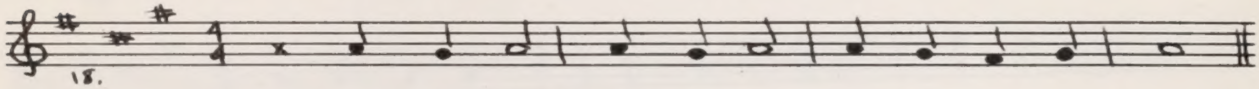
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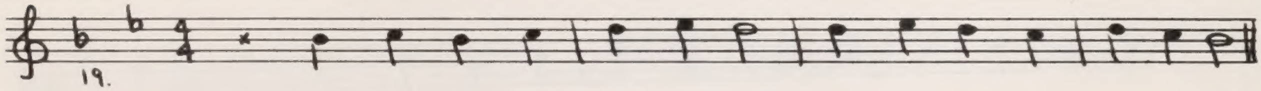
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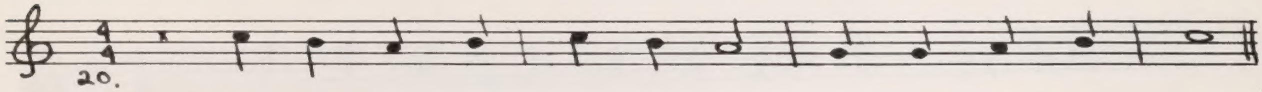
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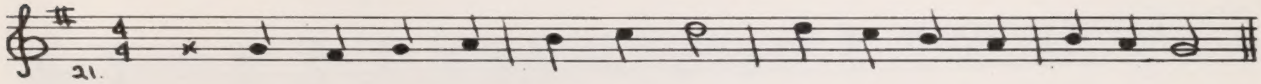
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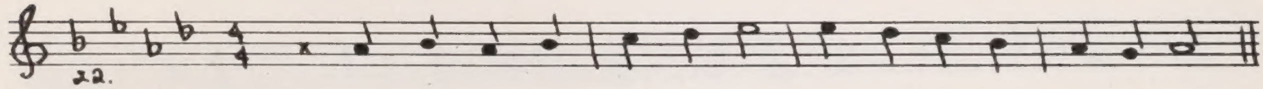
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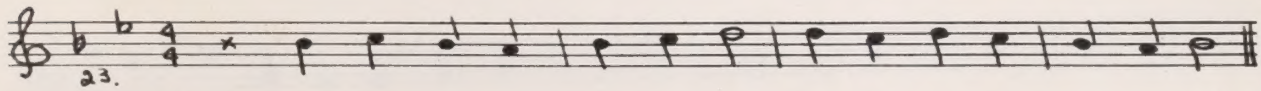
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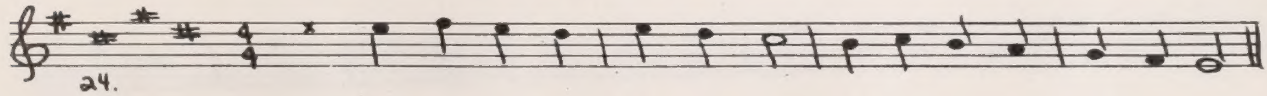
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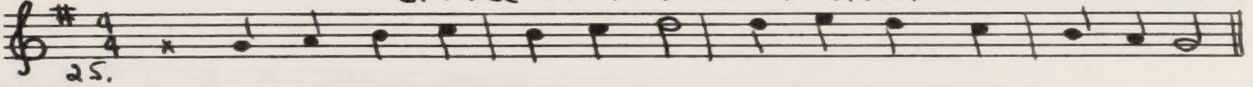

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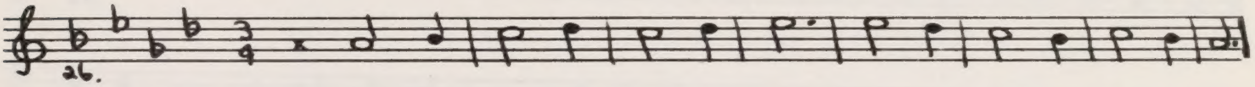

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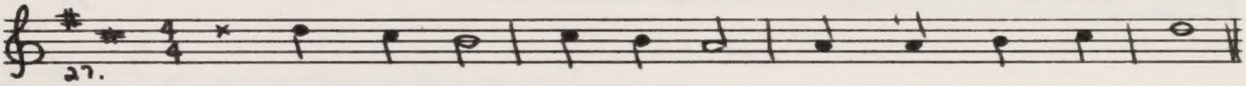

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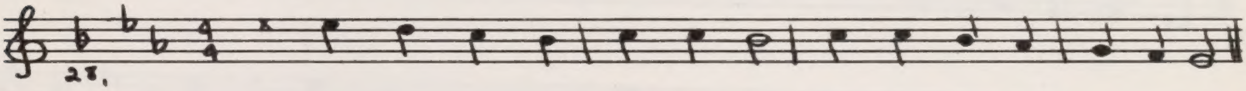

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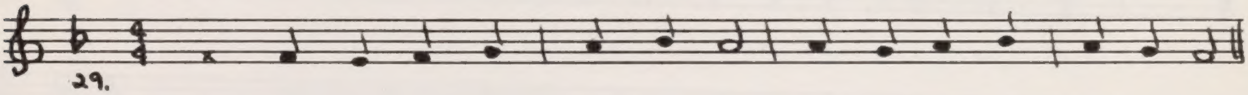

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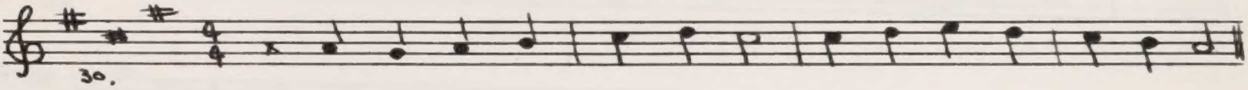

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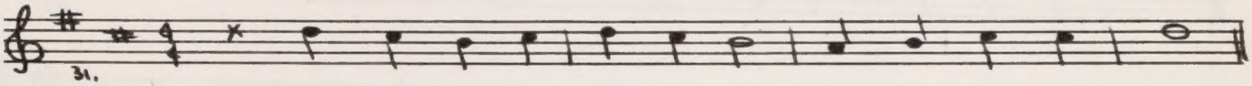

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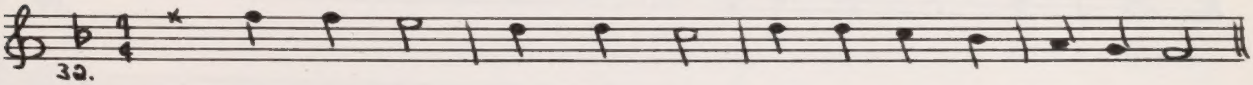

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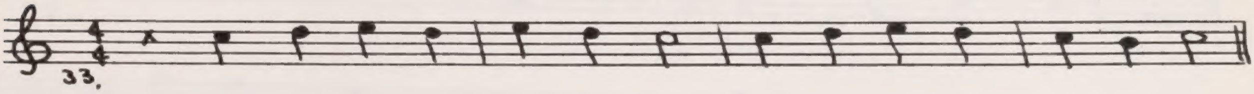

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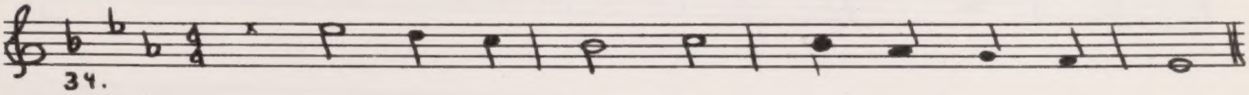

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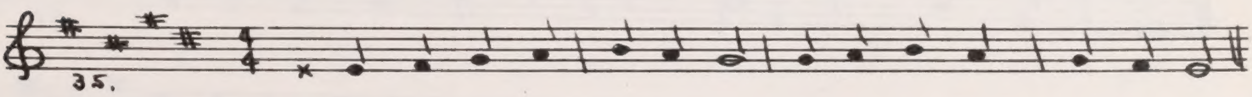

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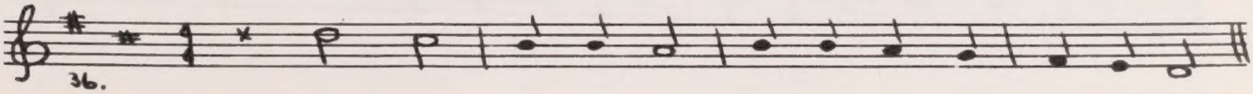

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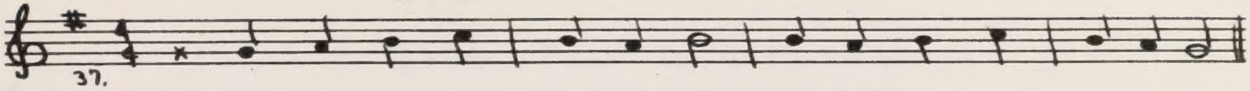

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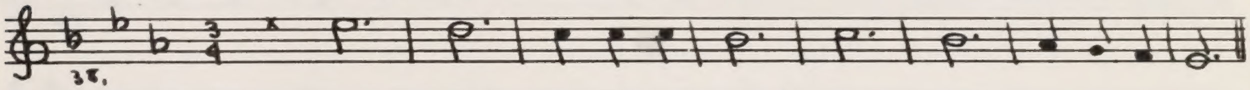

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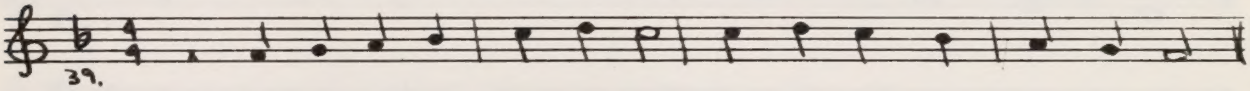

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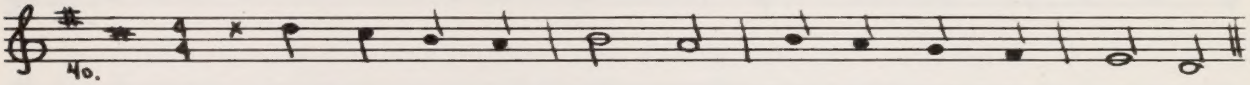

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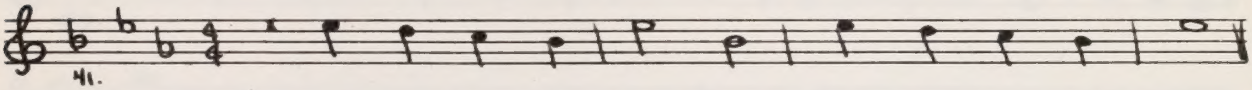

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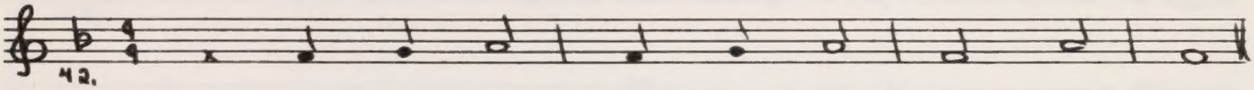

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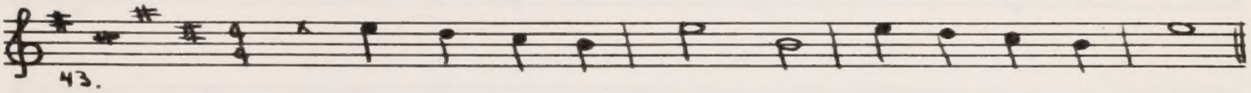

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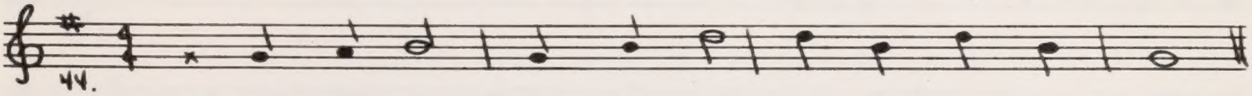

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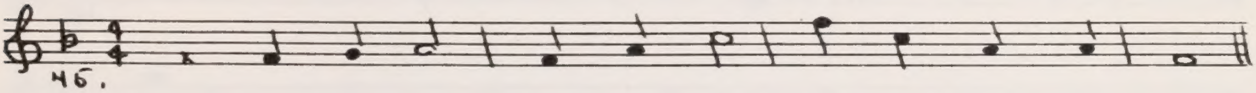

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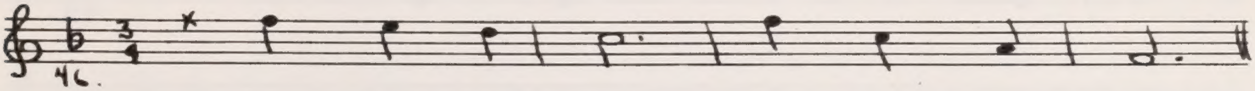

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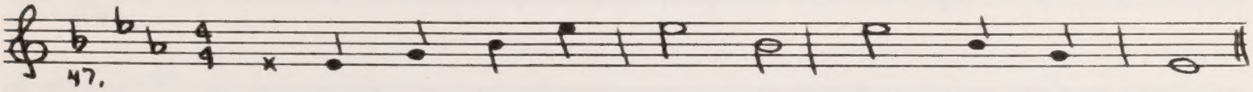

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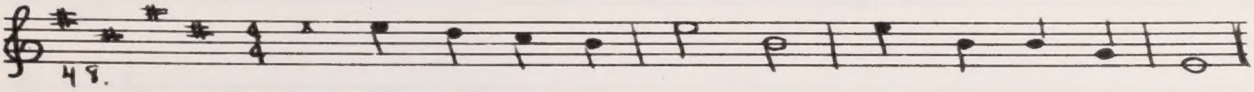
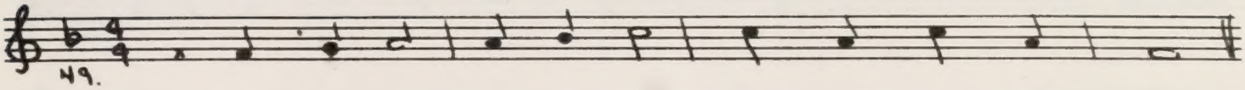


48.

Grade Four Drill Material.



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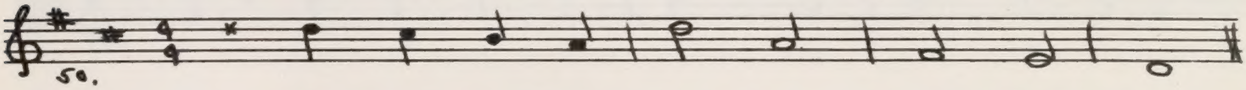

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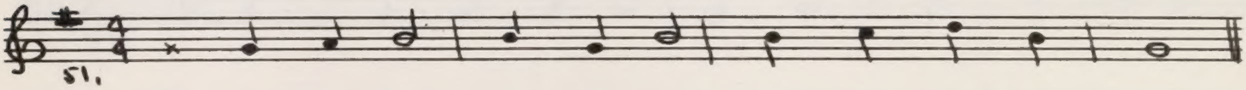

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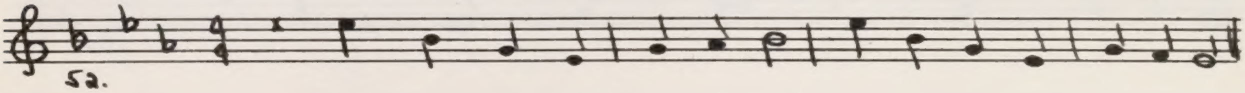

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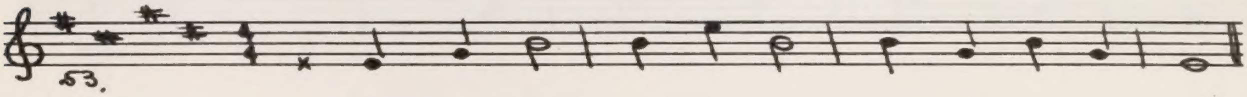

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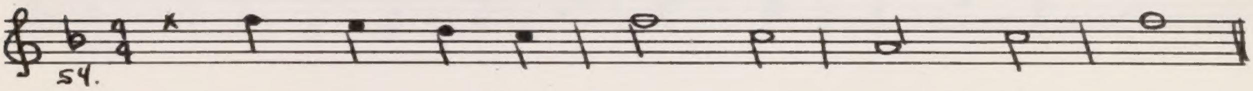

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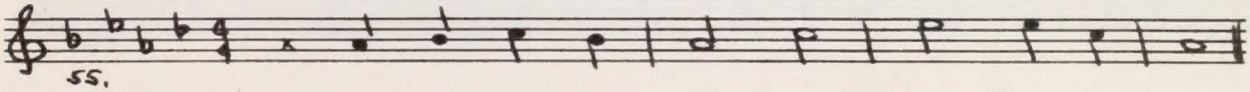

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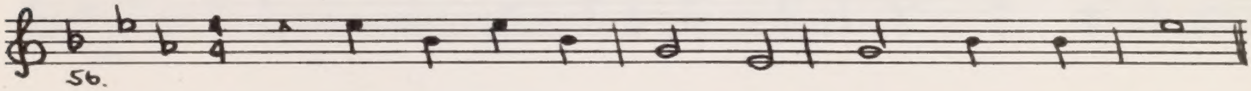

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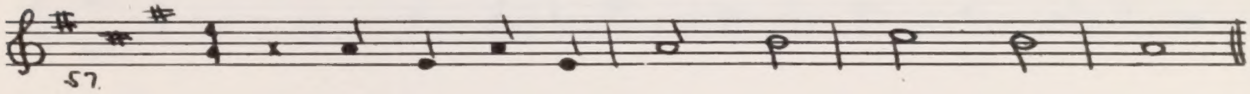

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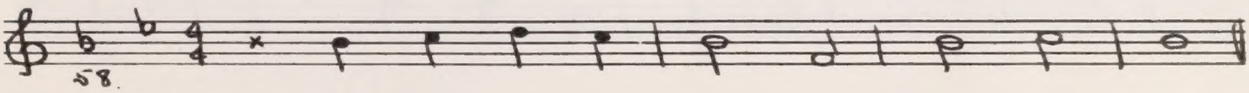

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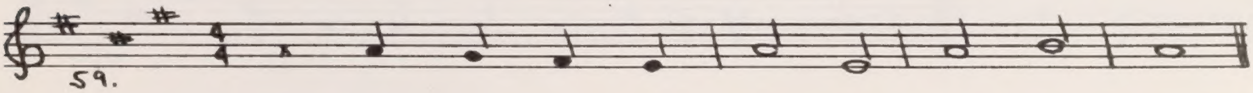

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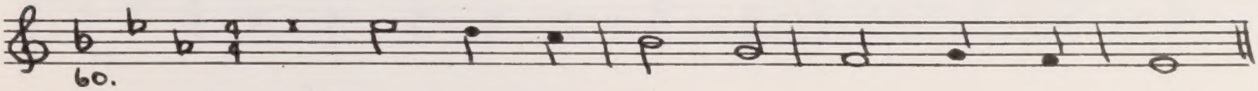

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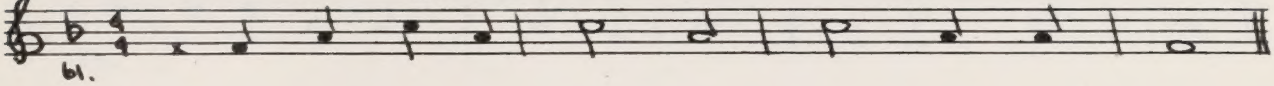
Grade Four Drill Material.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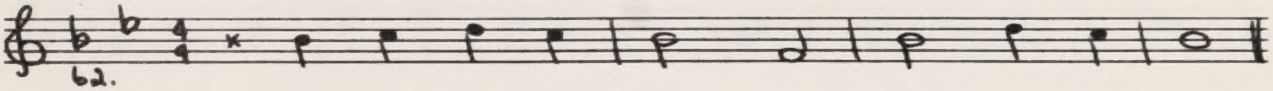
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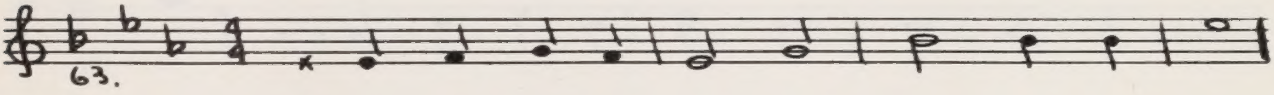
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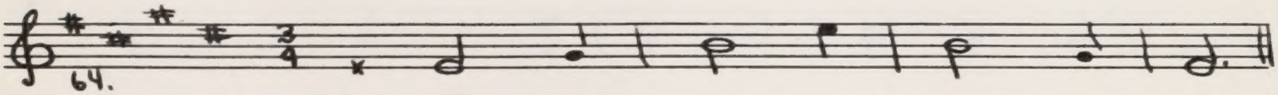
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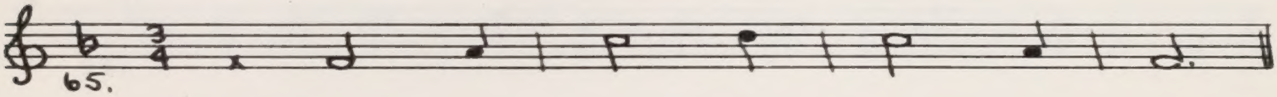
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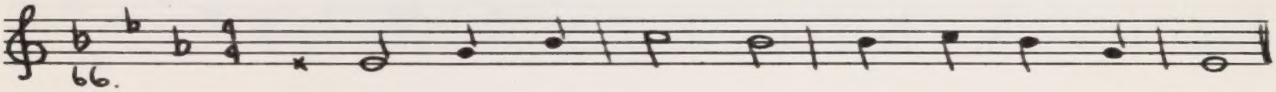
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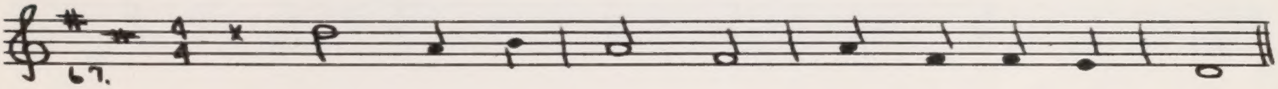
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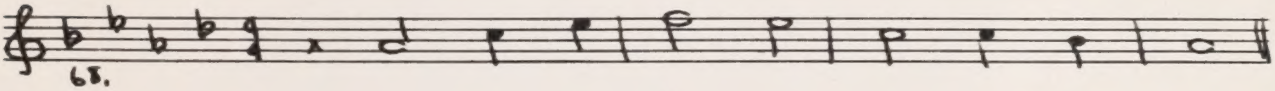
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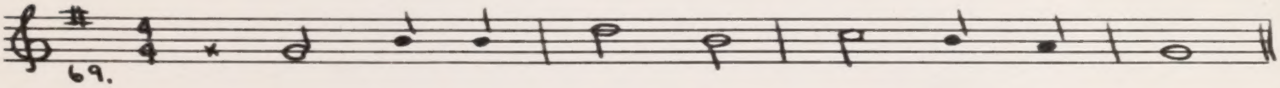
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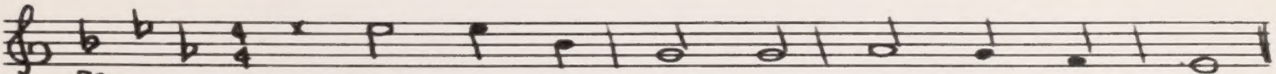
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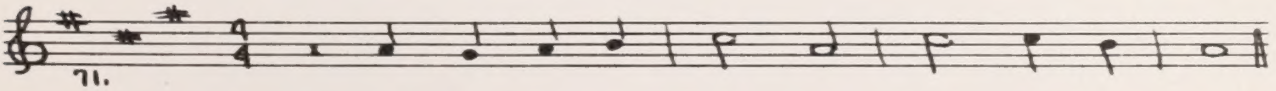
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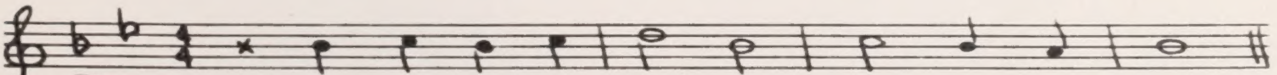
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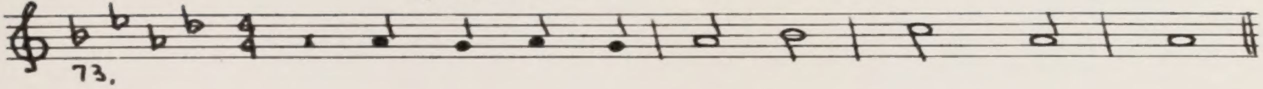
Grade Four Drill Material.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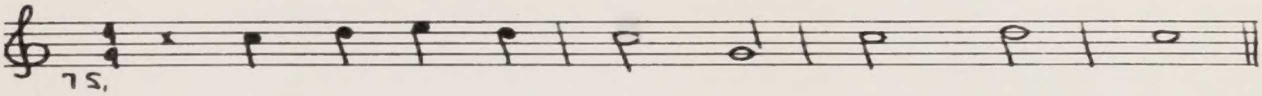
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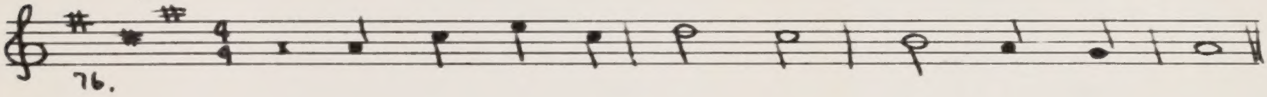
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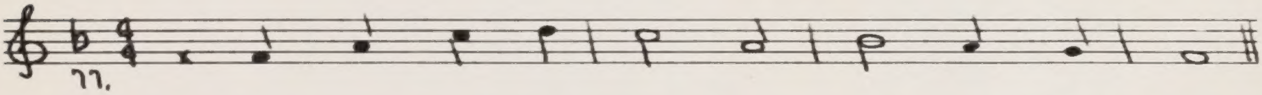
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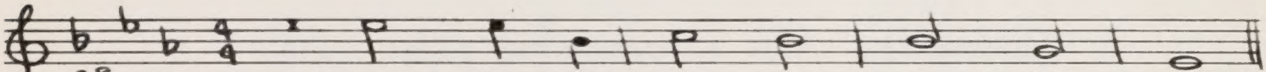
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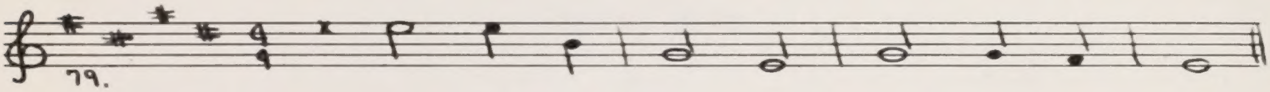
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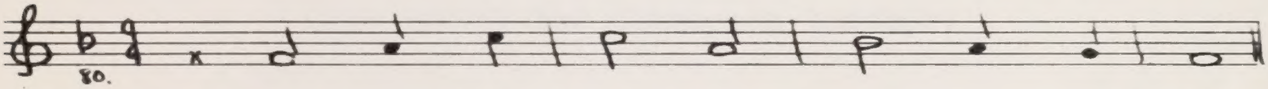
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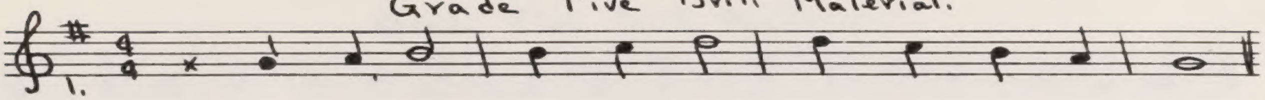
Daily Drill Exercises in Music Dictation

Grade Five

(For use by the classroom teacher)

Grade Five Drill Material.



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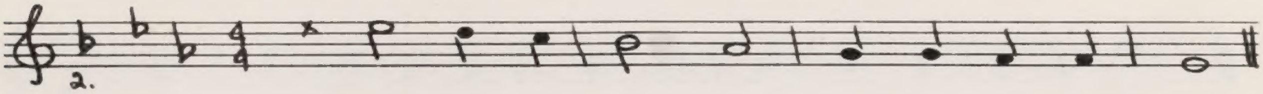

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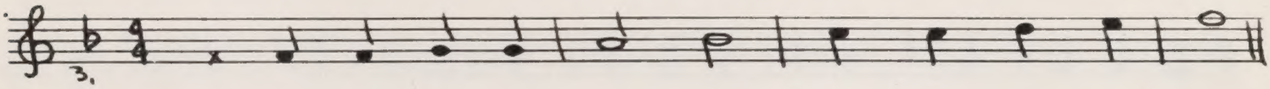

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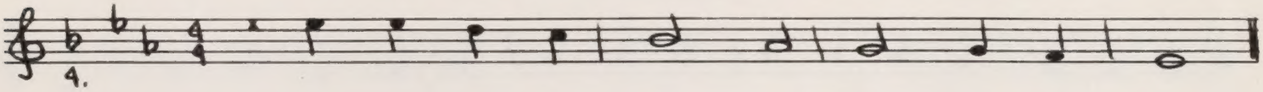

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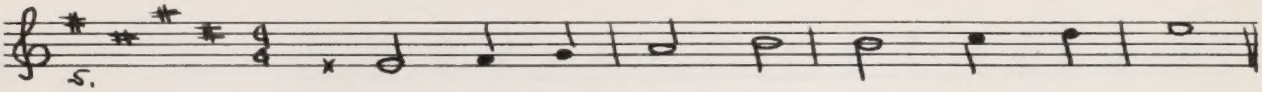

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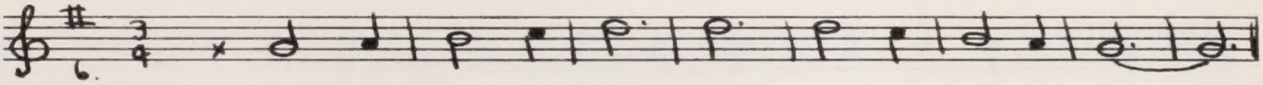

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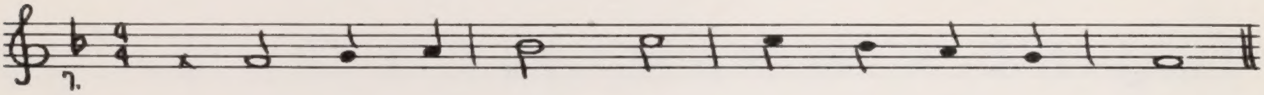

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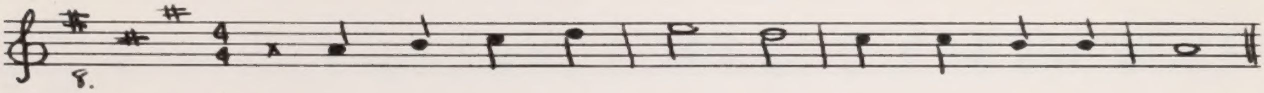

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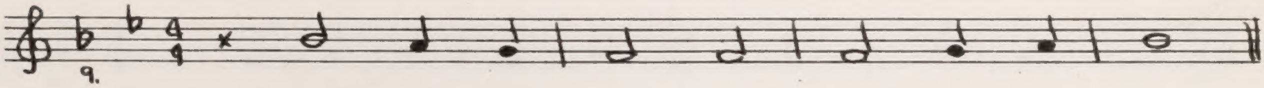

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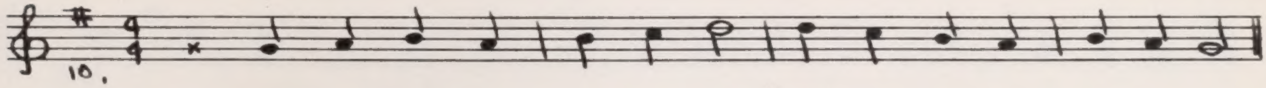

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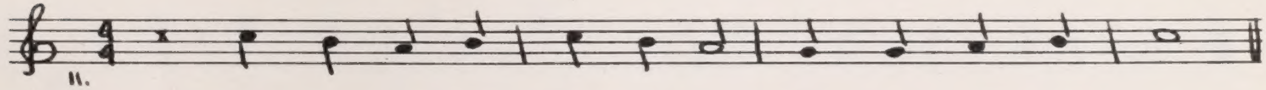

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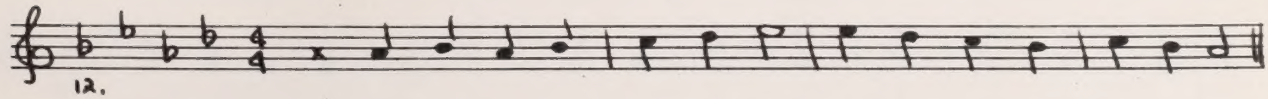

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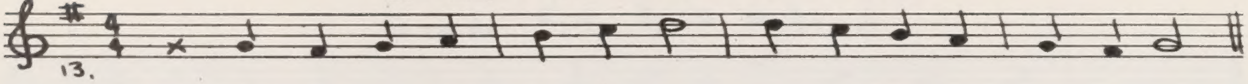
Grade Five Drill Material.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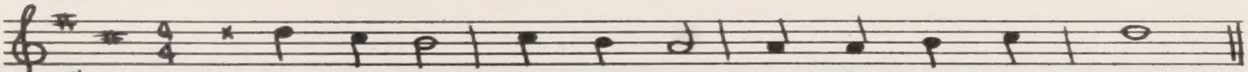
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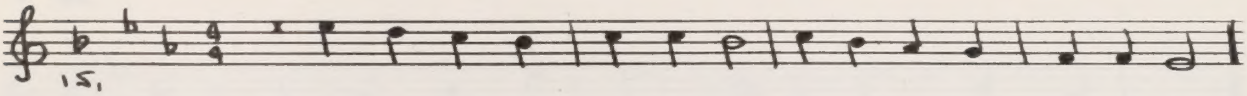
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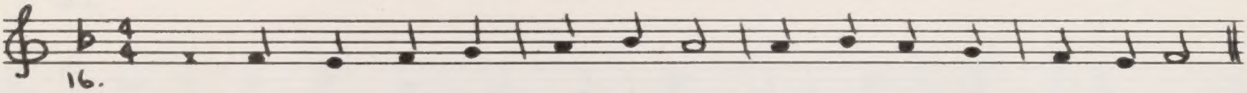
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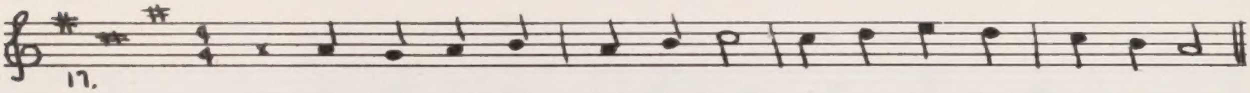
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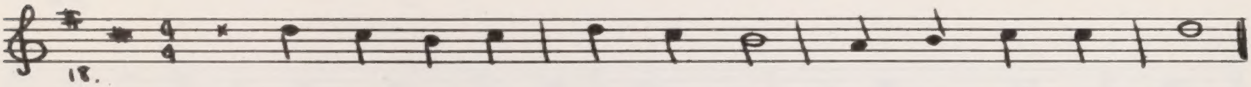
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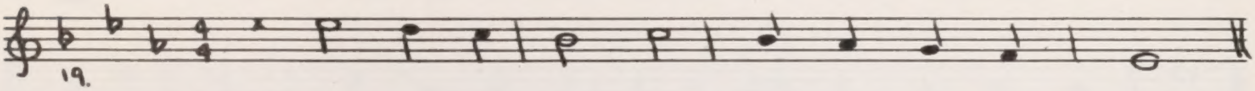
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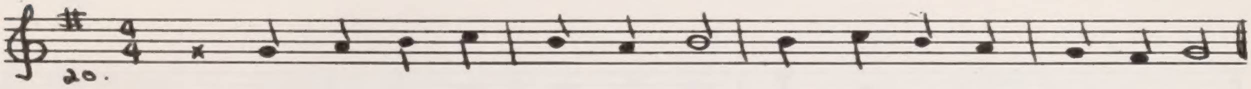
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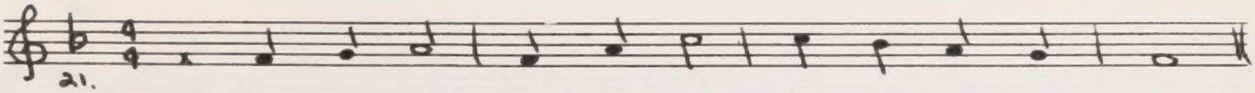
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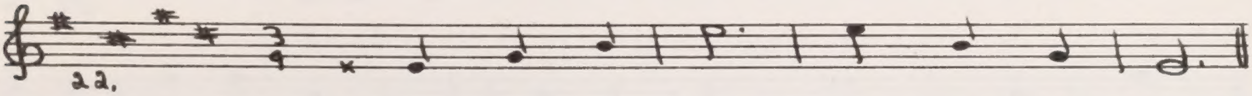
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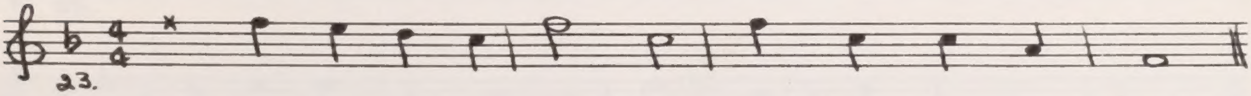
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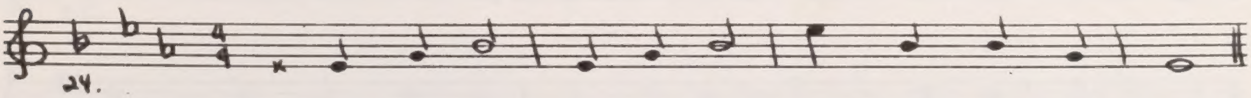
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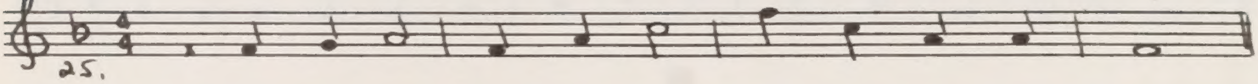
Grade Five Drill Material.



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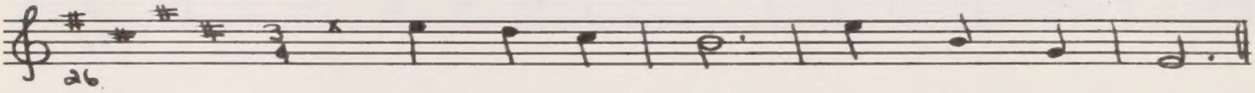

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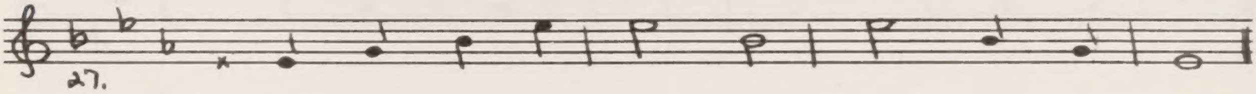

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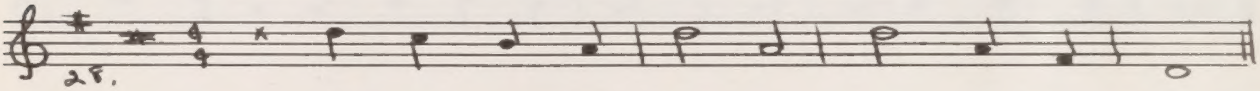

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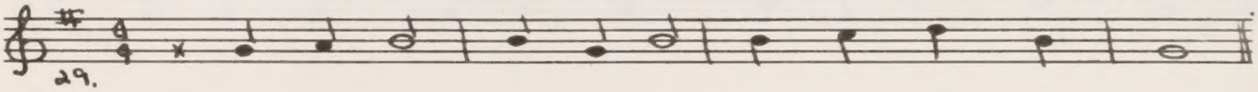

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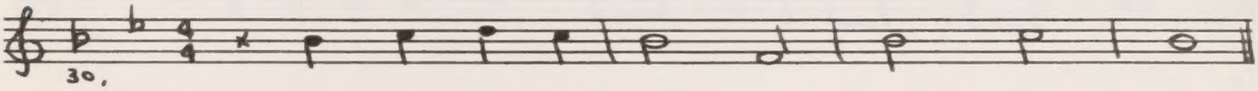

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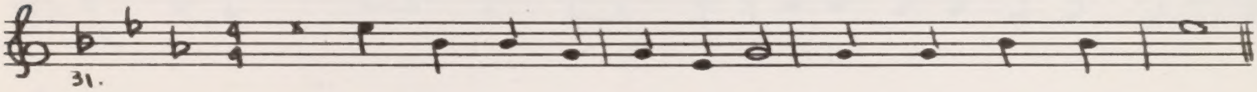

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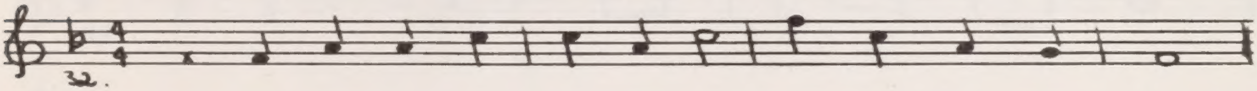

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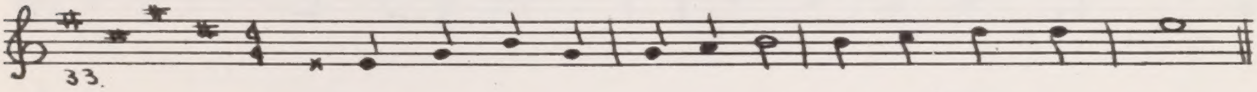

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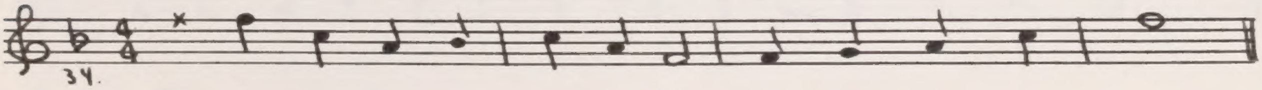

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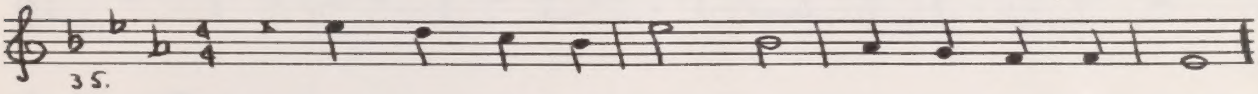

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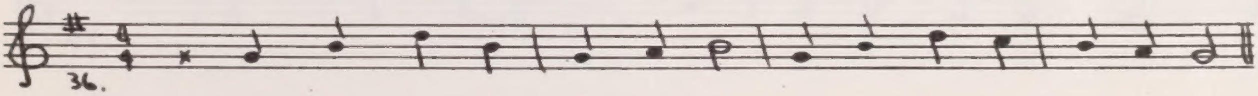

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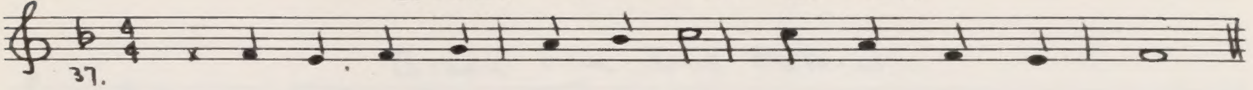
Grade Five Drill Material.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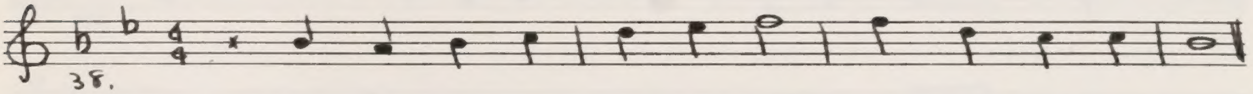
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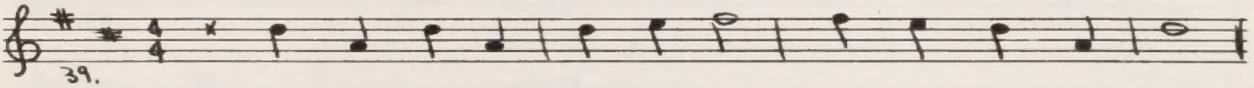
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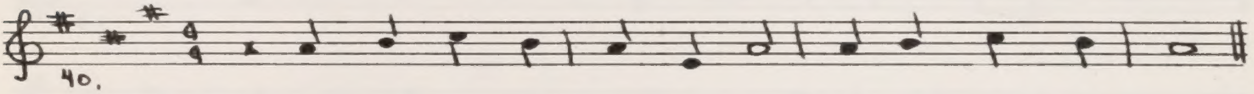
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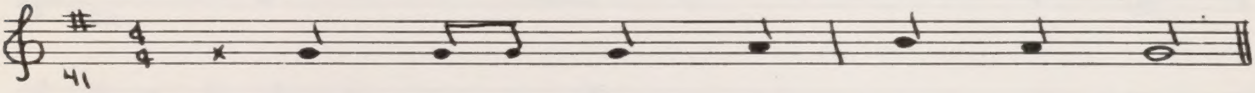
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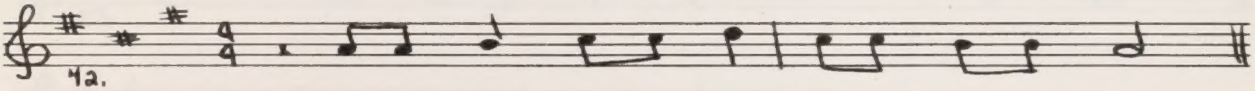
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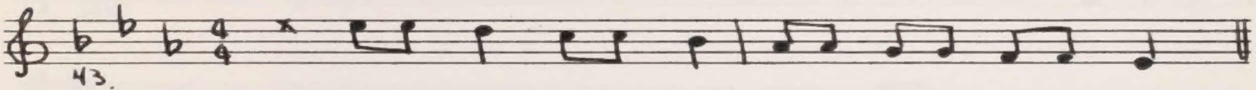
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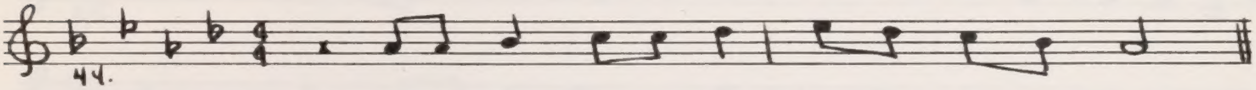
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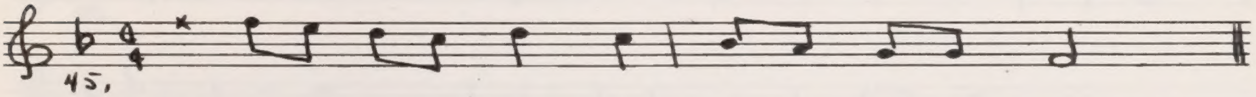
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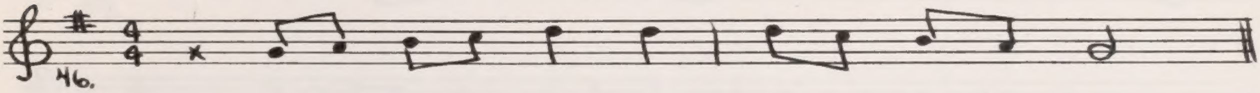
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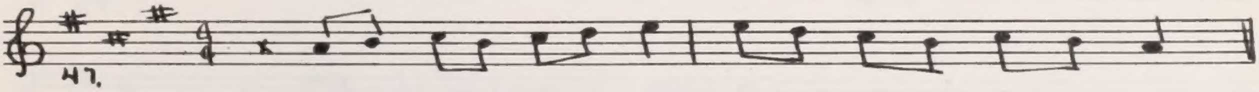
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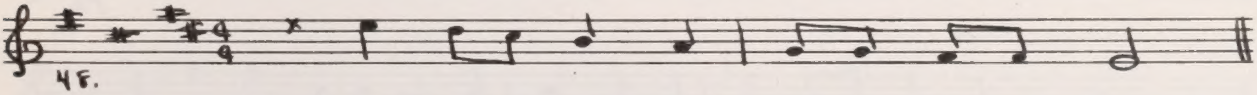
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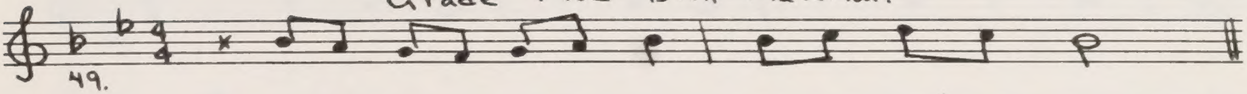
Grade Five Drill Material.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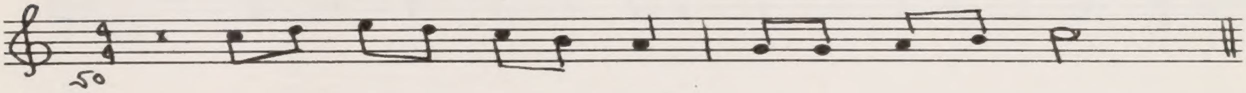
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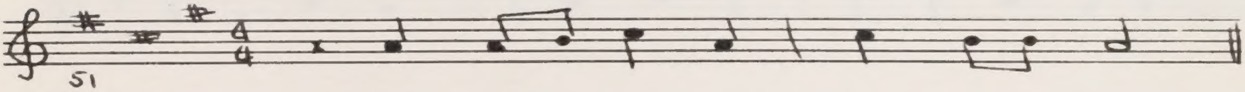
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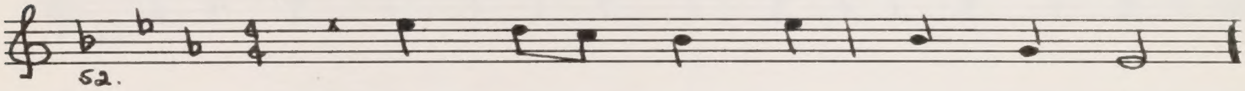
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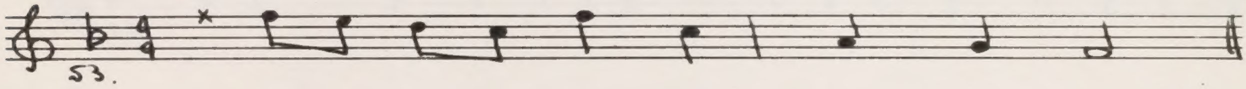
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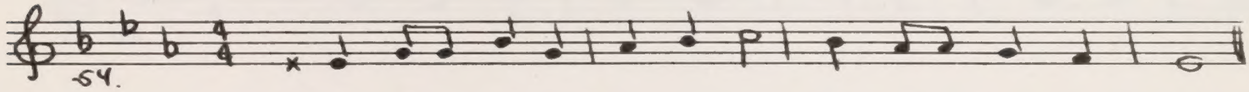
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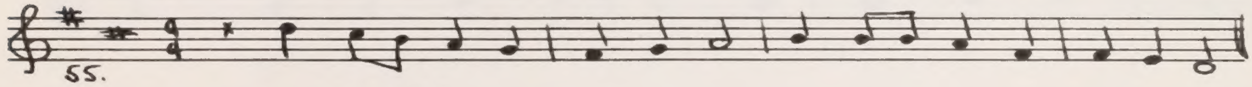
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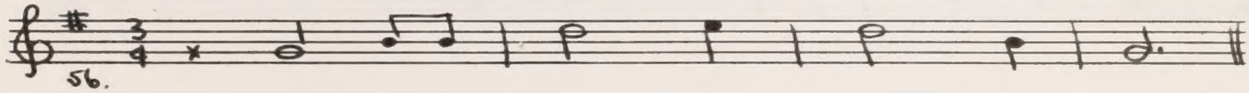
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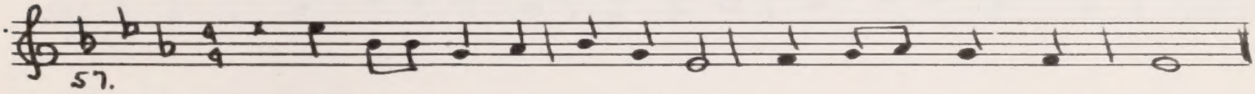
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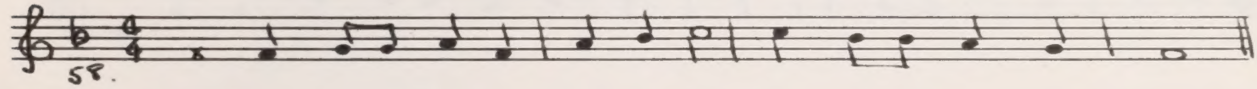
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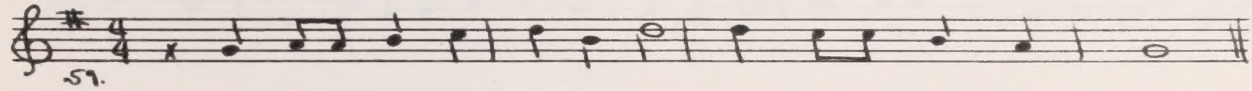
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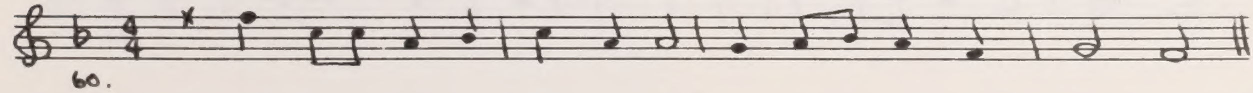
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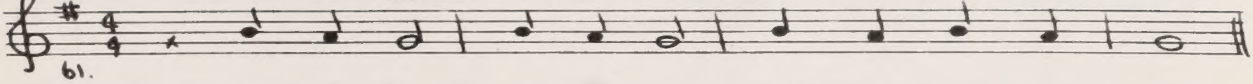

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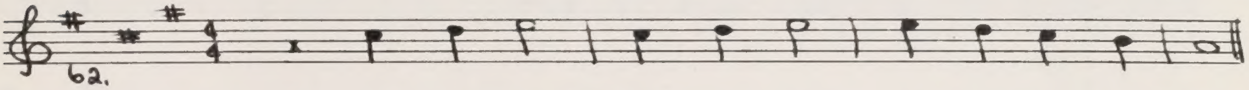

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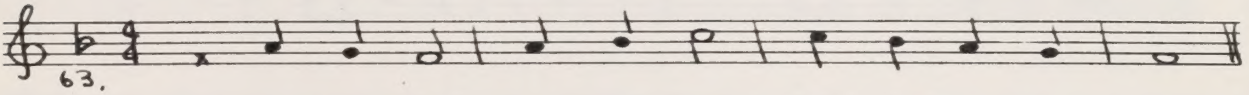

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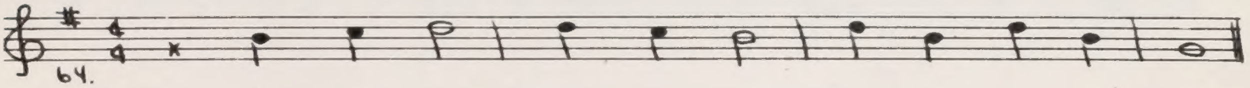

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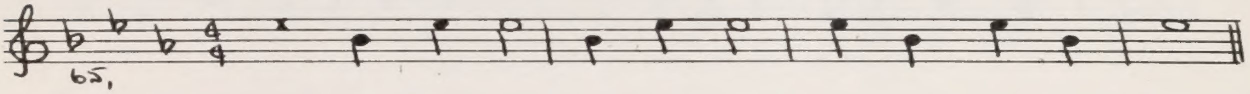

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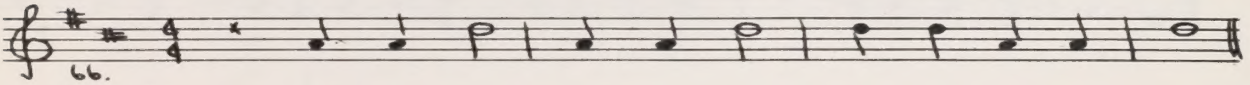

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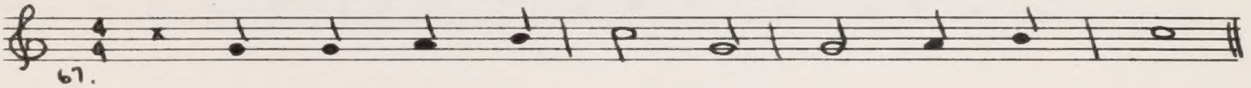

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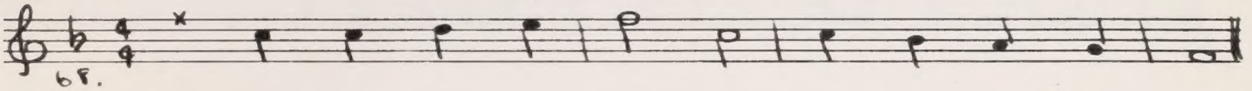

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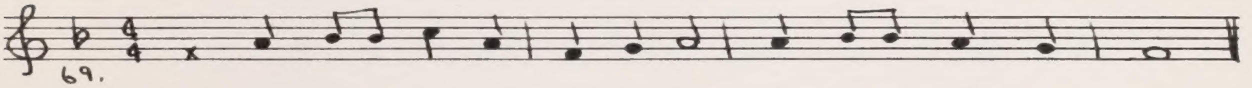

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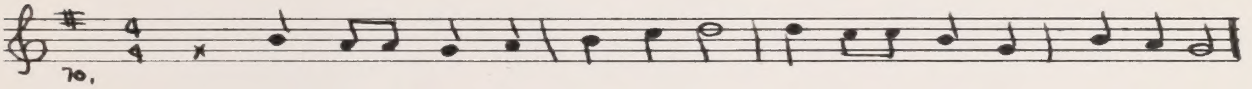

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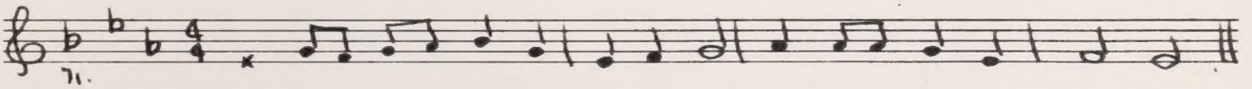

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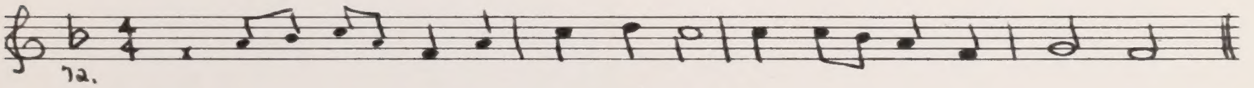

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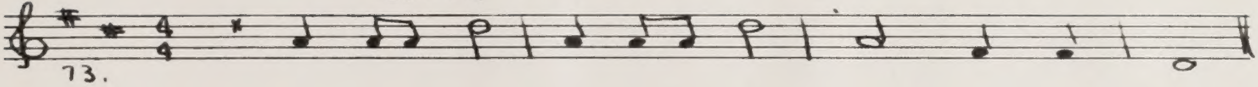
Grade Five Drill Material.



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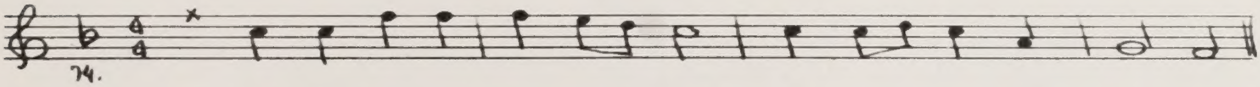

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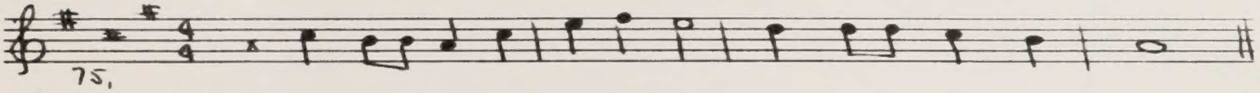

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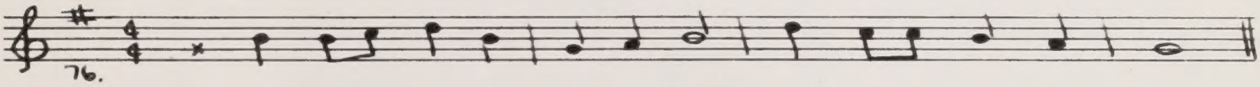

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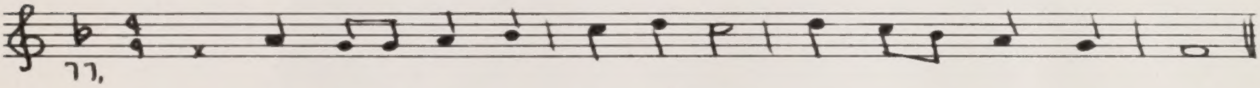

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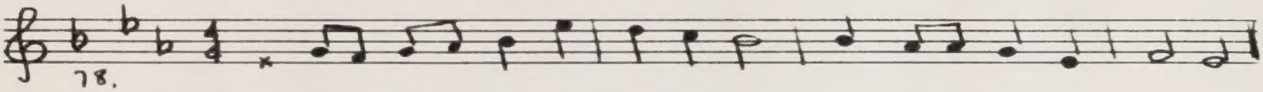

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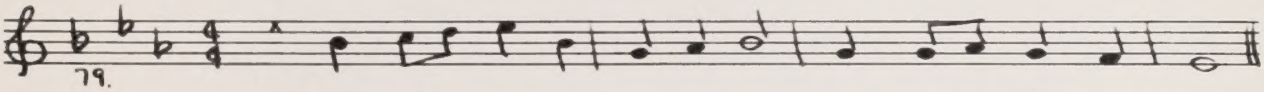

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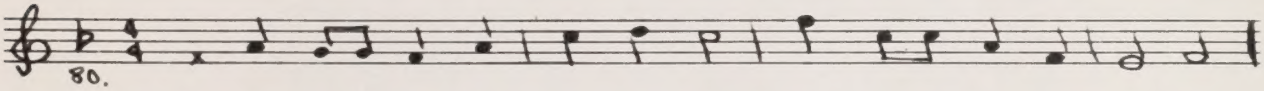


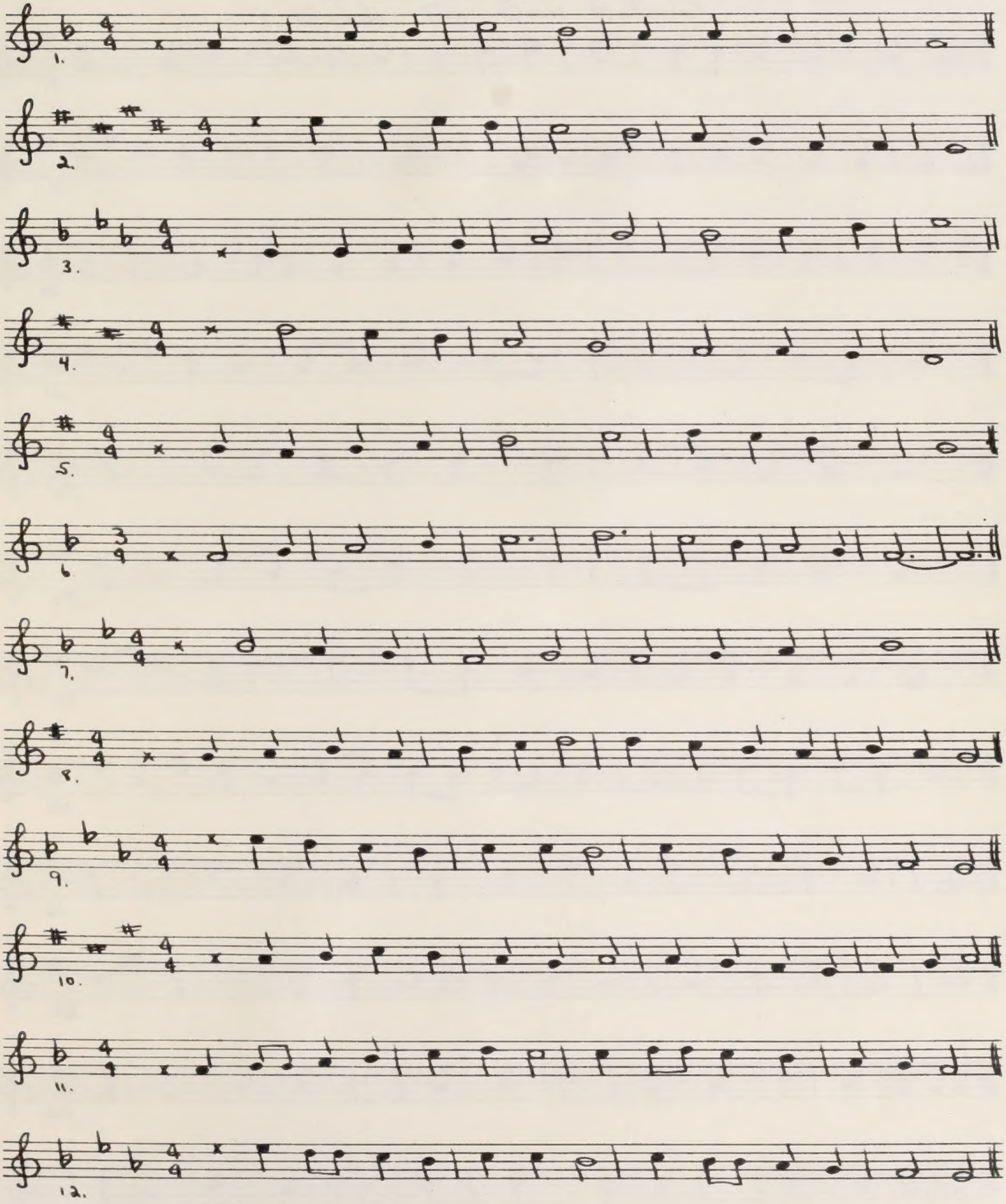
80.

Daily Drill Exercises in Music Dictation

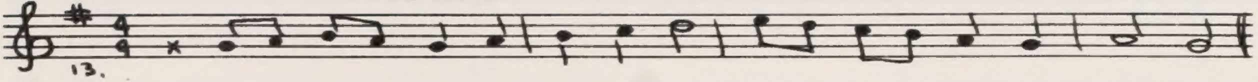
Grade Six

(For use by the classroom teacher)

Grade Six Drill Material.



Grade Six Drill Material.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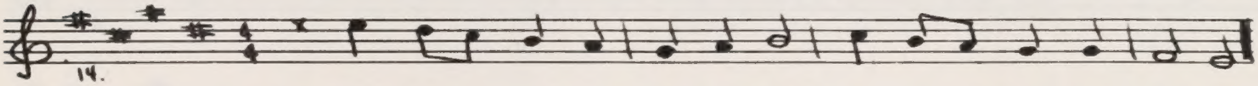
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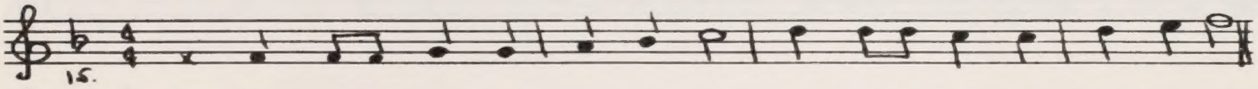
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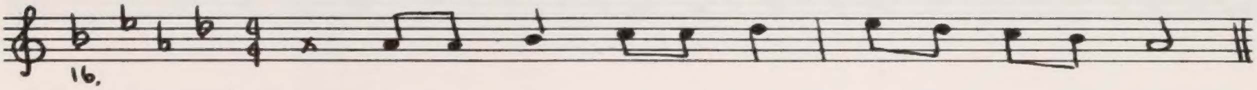
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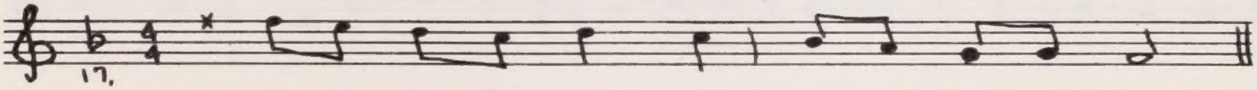
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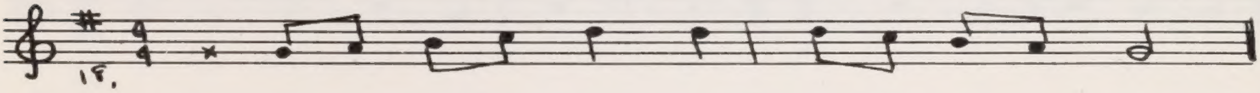
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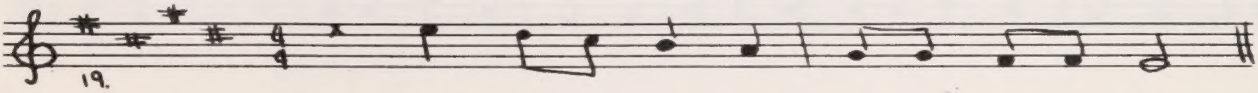
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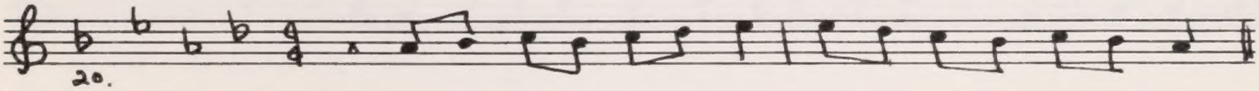
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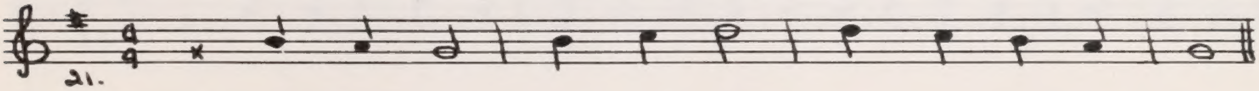
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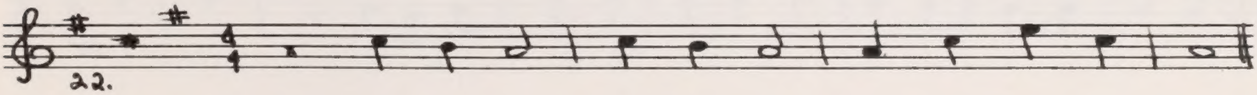
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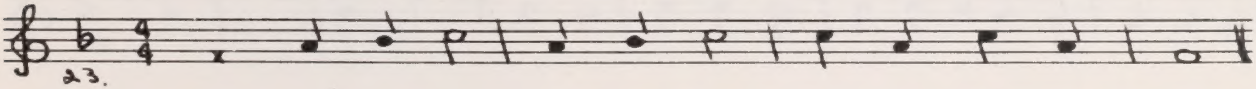
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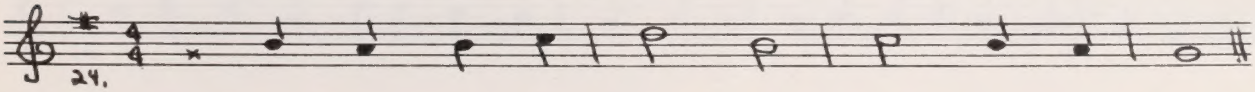
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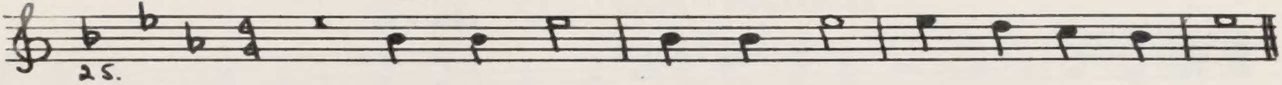
Grade Six Drill Material.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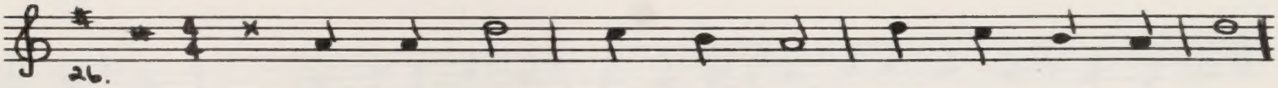
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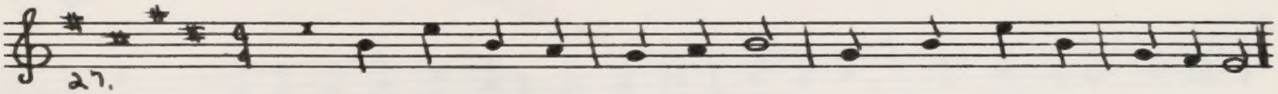
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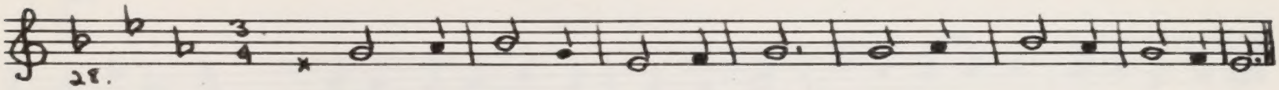
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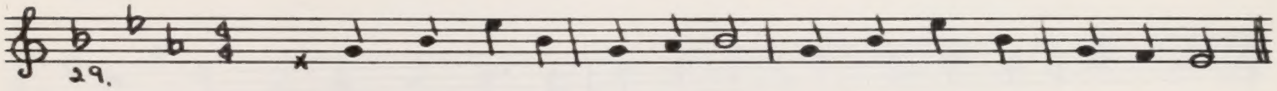
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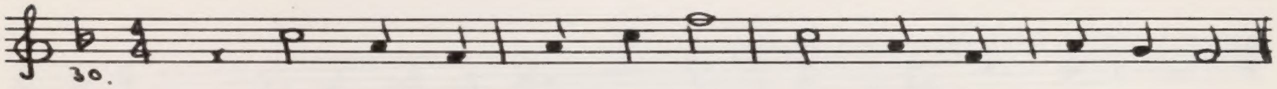
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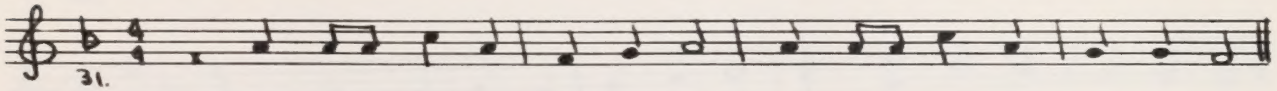
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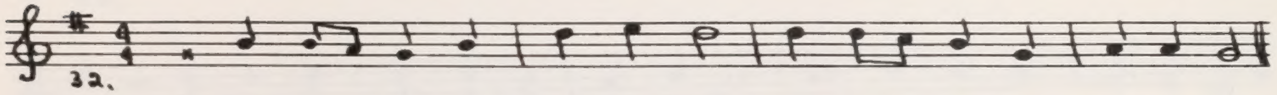
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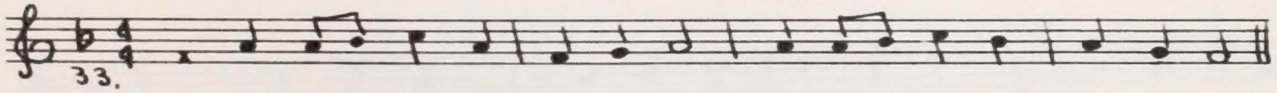
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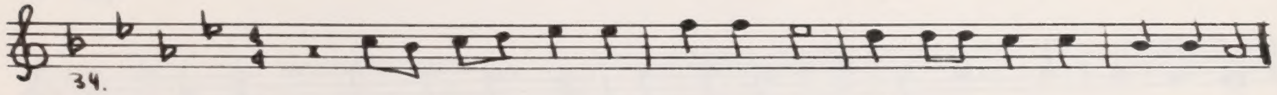
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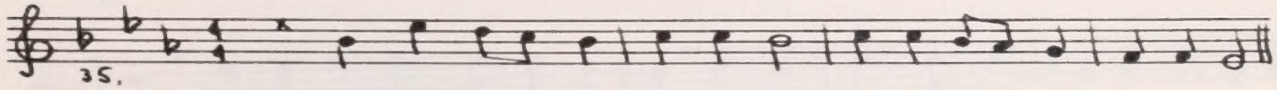
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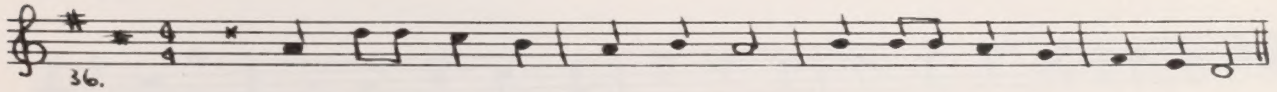
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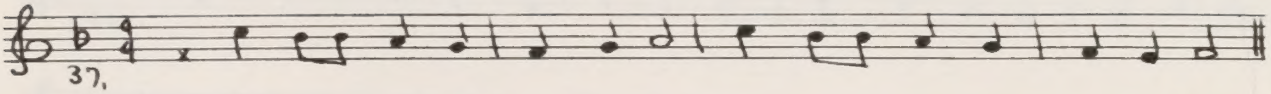
Grade Six Drill Material.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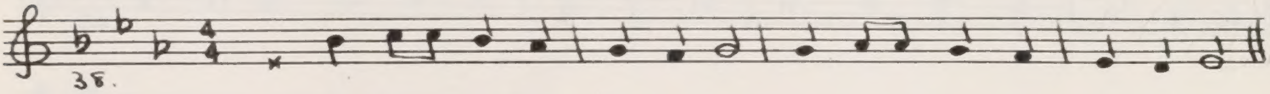
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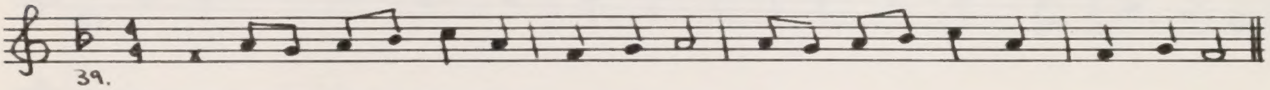
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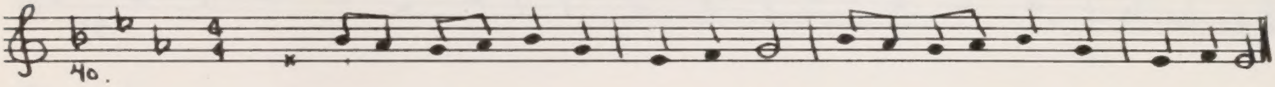
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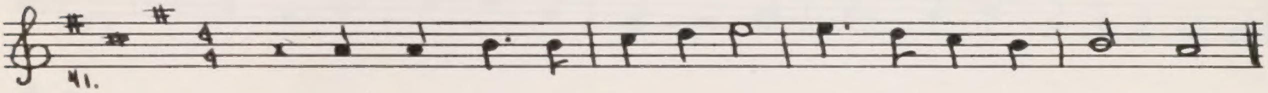
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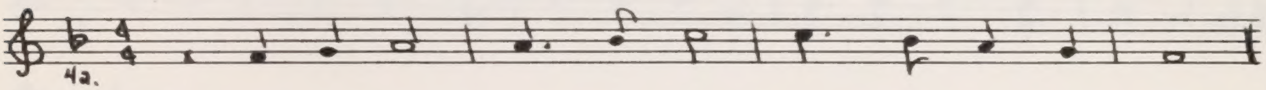
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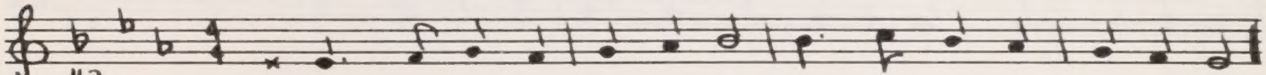
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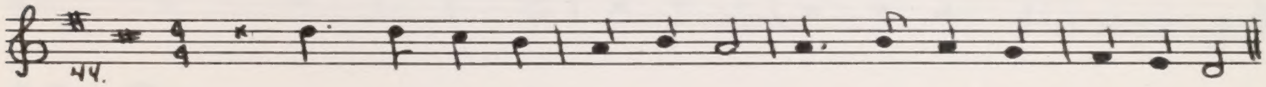
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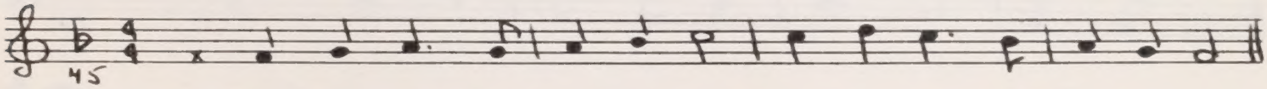
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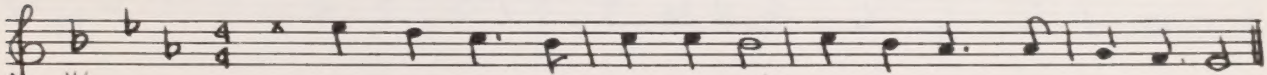
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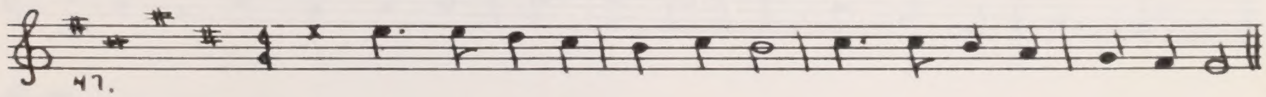
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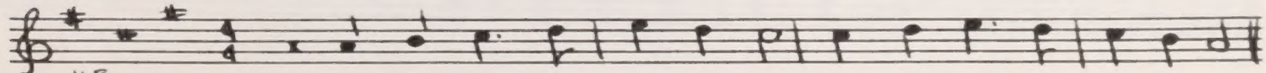
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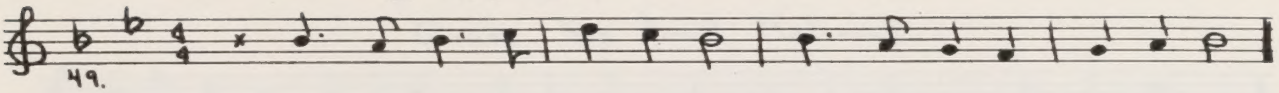
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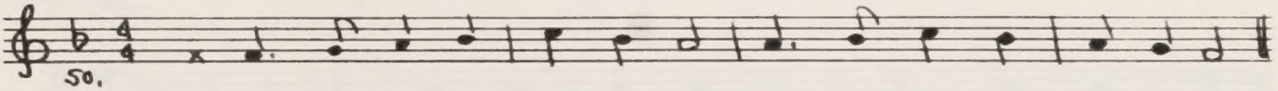
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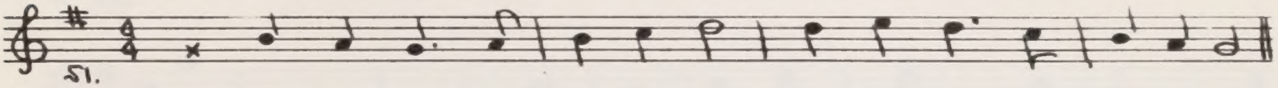
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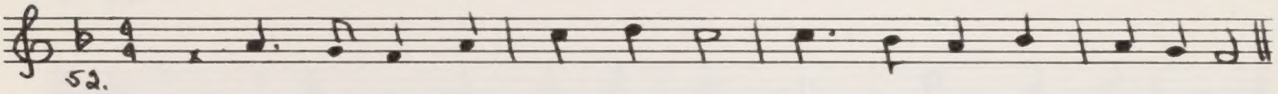
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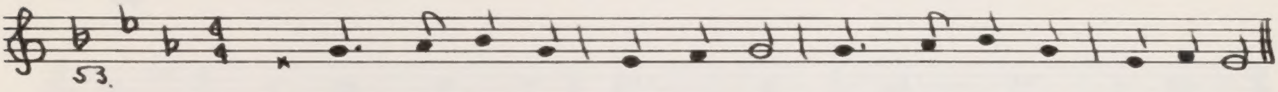
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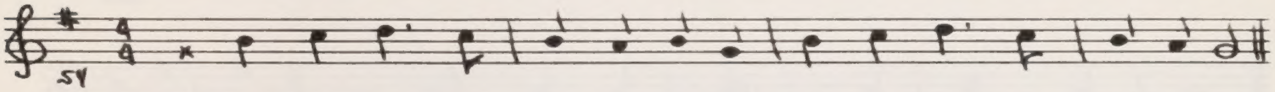
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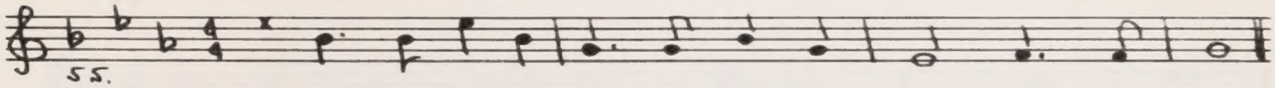
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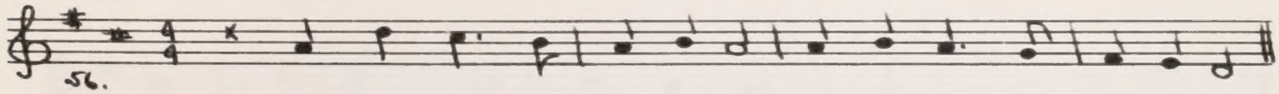
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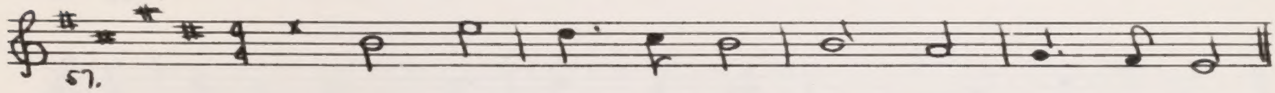
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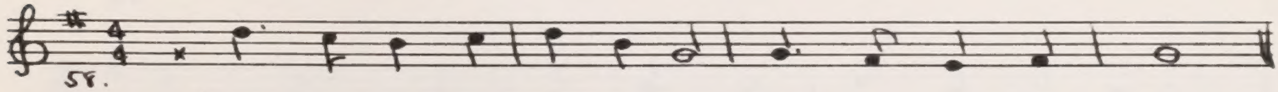
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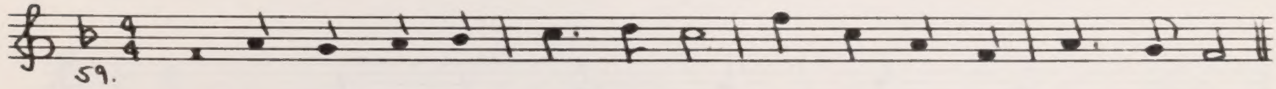
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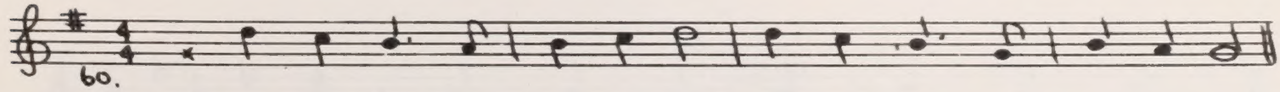
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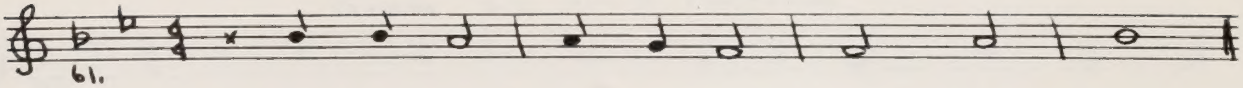
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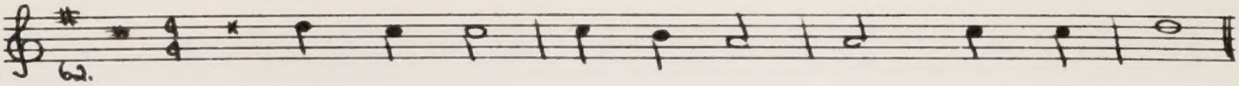
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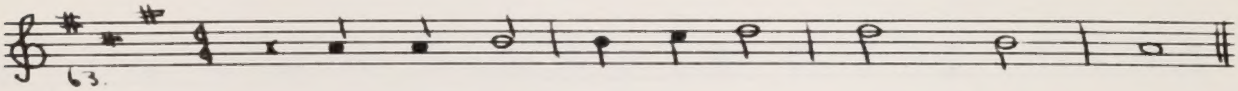
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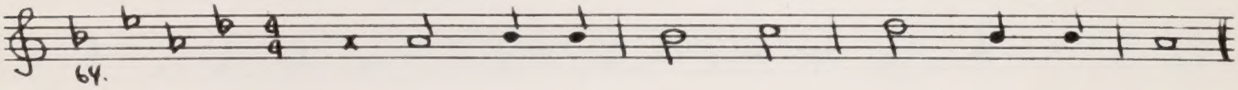
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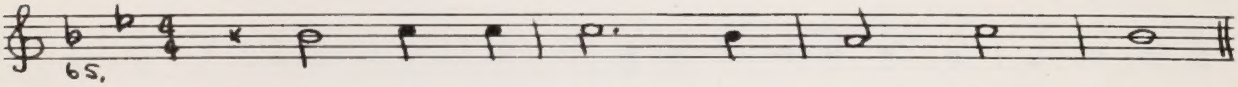
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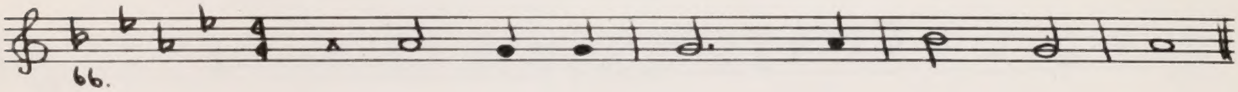
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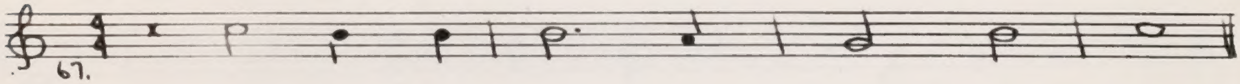
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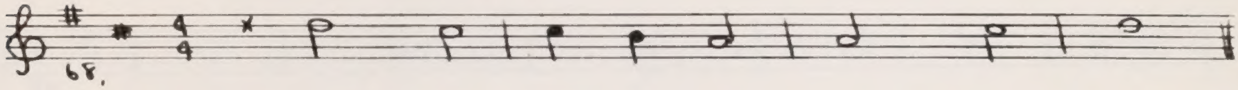
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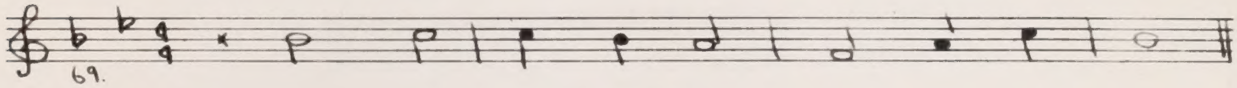
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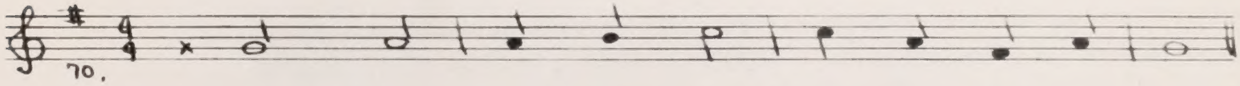
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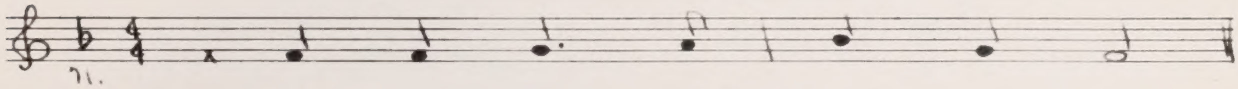
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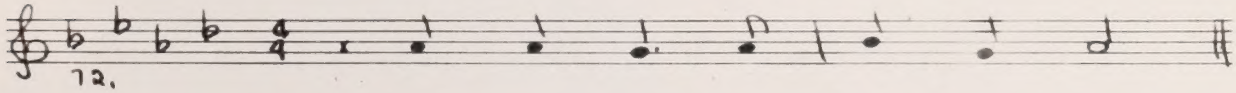
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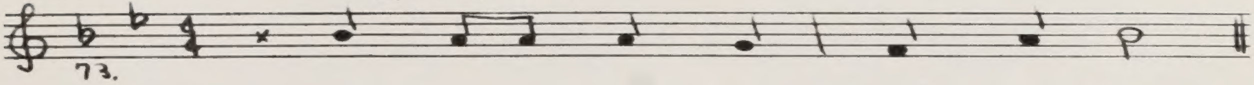
Grade Six Drill Material.



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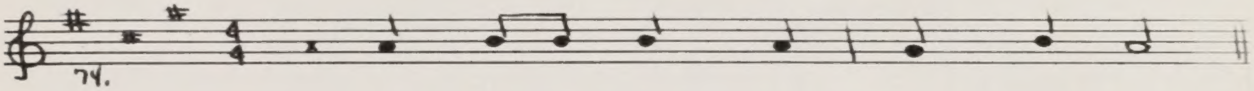

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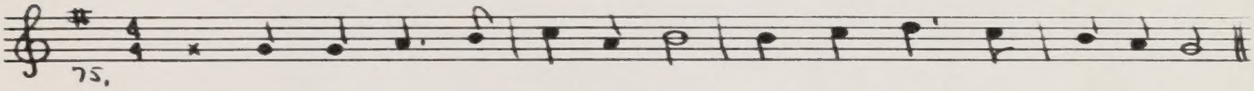

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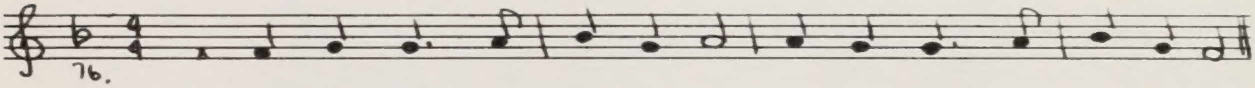

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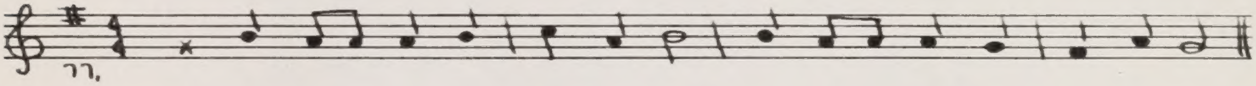

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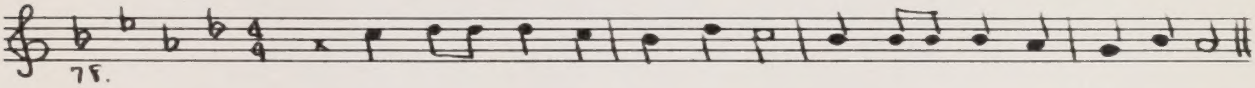

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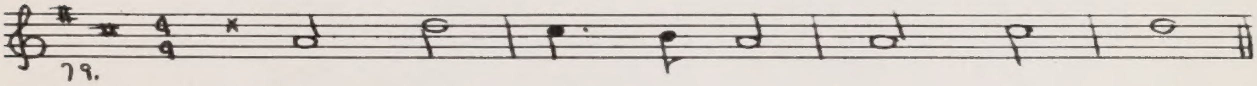

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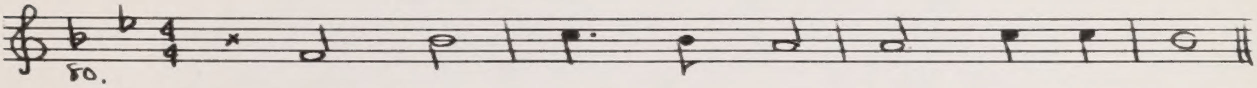


80.

Procedure for bi-weekly testing program

When the selected groups had had sufficient orientation in the procedures for taking dictation in music, and had had at least two weeks drill in the actual process of writing such dictation, the testing program began. Twenty test problems were provided for each of the experimental sections, these problems were provided for each of the experimental sections, these problems being similar in nature to those found in the daily drill material. The twenty test problems provide for two exercises to be given at each meeting of the class by the music supervisor. That is, if the supervisor meets each class once in two weeks, he must present two problems in music dictation at each of ten such meetings, covering a total of twenty school weeks.

Administration of the test material was similar to that followed by the classroom teacher in her daily drill. However, un-used staff-lined paper was provided, since the efforts of the pupils were to be formally corrected and graded. It was essential, also, that the test administrator comply exactly with the method in presenting the dictation as that requested of the teacher, since the results in the tests should reflect the accumulation of skills resulting from daily drill. These procedures have been enumerated in the section under "Instructions to classroom teachers".

Following the administration of each bi-weekly test, the papers were collected, corrected, graded, and the scores recorded. The papers were then returned to the classroom for review, both by the teacher and by the pupils. Pupils were thus informed as to where their mistakes had been made, and the teacher was able to discover weaknesses in the abilities of her class. The teacher could then take remedial measures toward the correction of those weaknesses.

Content of the bi-weekly test material

The bi-weekly test material, to be administered by the music supervisor, provides for two exercises to be given at each meeting of the class, covering a total period of twenty school weeks. The construction of the test material is as follows:

Grade Four

20 problems:

1. 10 with no melodic skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
2. 10 with "Tonic" chord skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

Grade Five

20 problems:

1. 6 with no melodic skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
2. 4 with "Tonic" chord skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
3. 2 with no melodic skips, adding ♫
4. 2 with "Tonic" chord skips, using ♫, ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
5. 6 starting on "Mi" or "Sol", using ♫, ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

Grade Six

20 problems:

1. 2 with no melodic skips, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝
2. 2 with no melodic skips, adding ♫

3. 4 with "Tonic" chord skips, starting on "Mi" or "Sol", using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

4. 2 with "Tonic" chord skips, starting on "Mi" or "Sol", using ♫, ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

5. 2 with no melodic skips, adding ♩. ♪

6. 2 with "Tonic" chord skips, using ♩. ♪, and starting on "Mi" or "Sol".

7. 2 with skips of the "Dominant" chord, using ♩, 𝅗𝅥, 𝅗𝅥., 𝅝

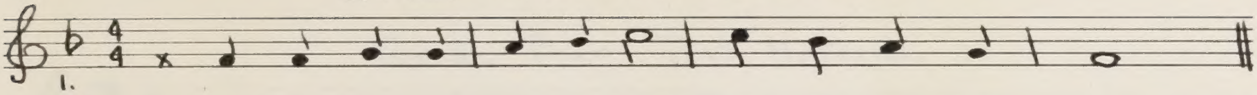
8. 4 with skips of the "Dominant" chord, using all previous rhythms.

Test Material for Music Dictation

Grade Four

(For use by the test administrator)

Grade Four Test Material.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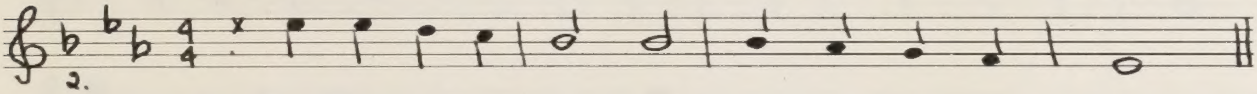
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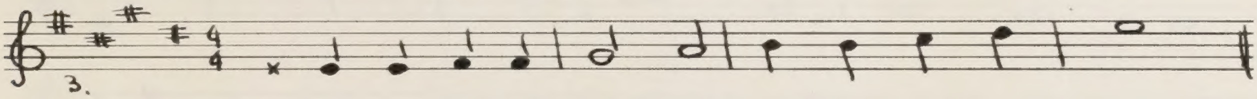
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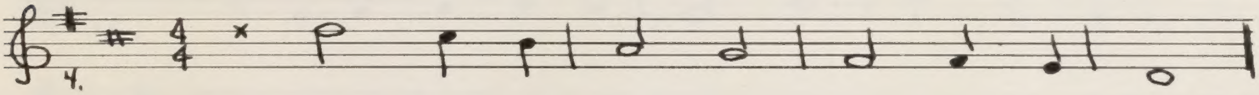
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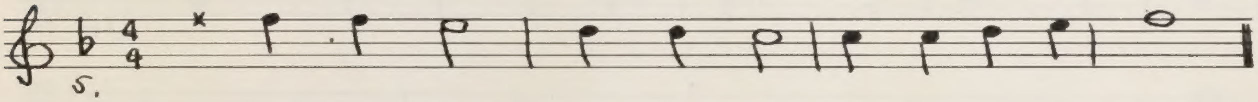
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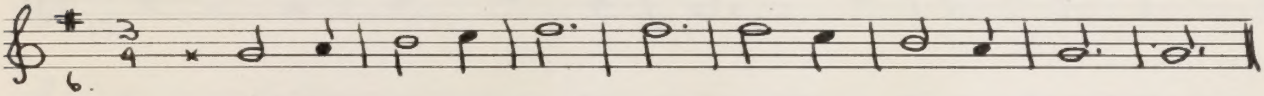
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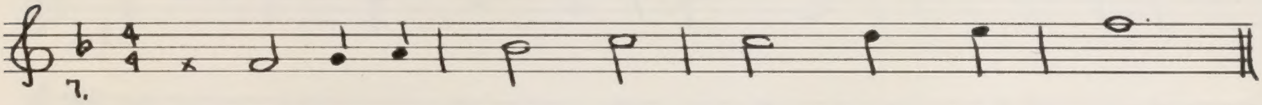
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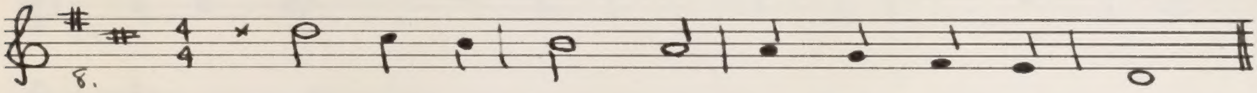
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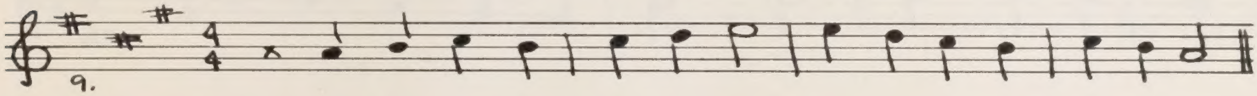
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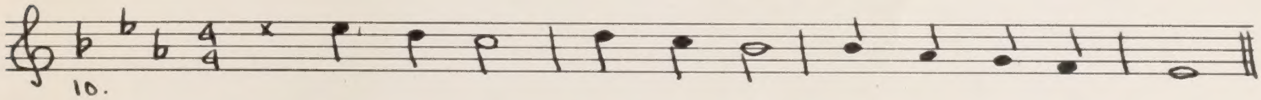
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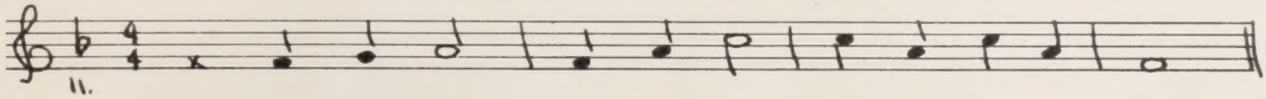
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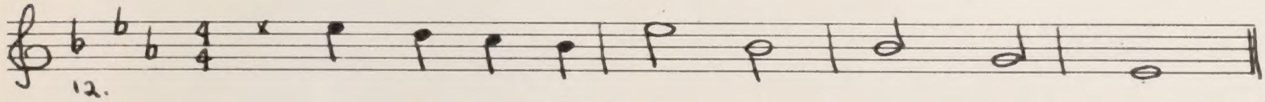
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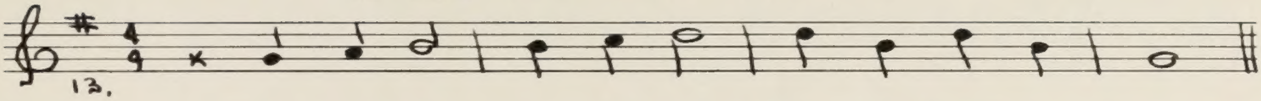
Grade Four Test Material.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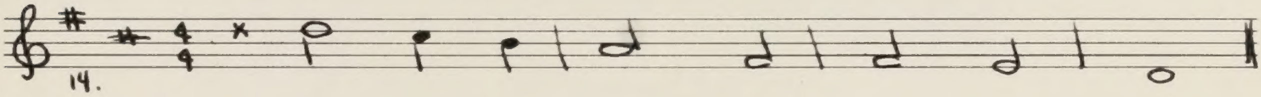
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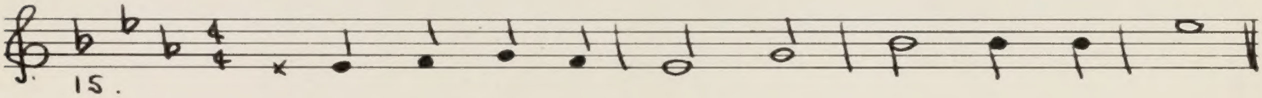
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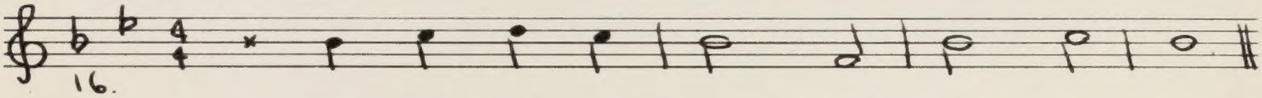
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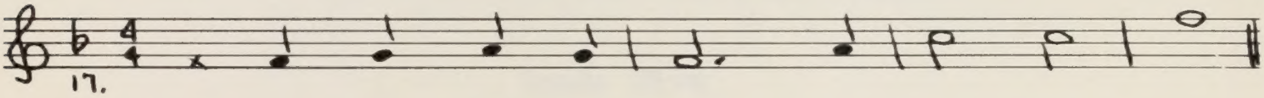
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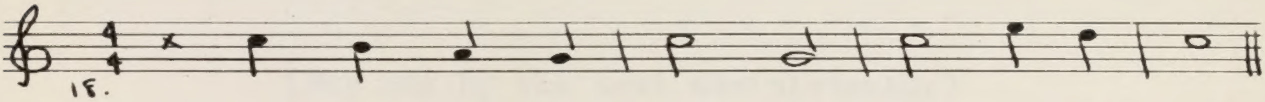
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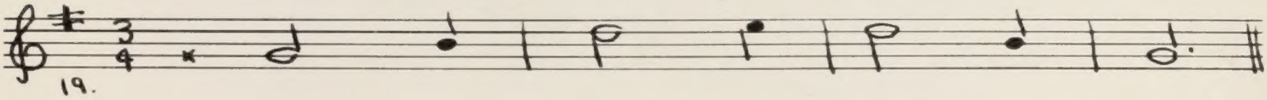
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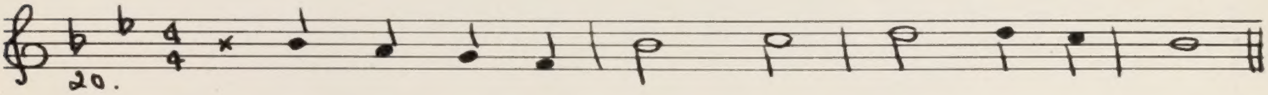
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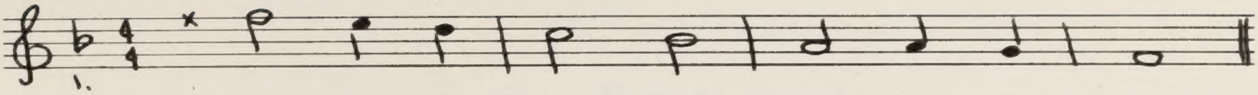
Test Material for Music Dictation

Grade Five

(For use by the test administrator)

Grade Five Test Material.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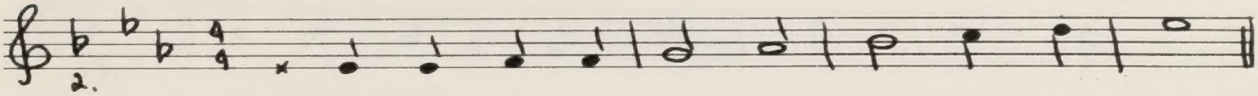
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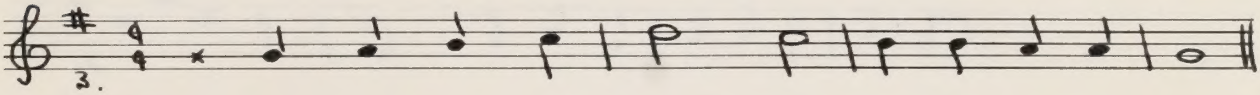
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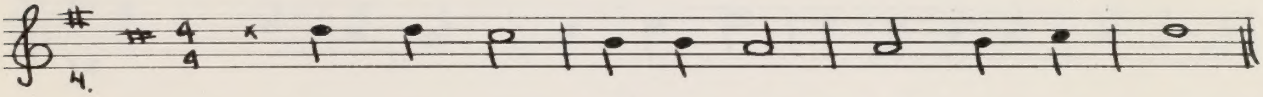
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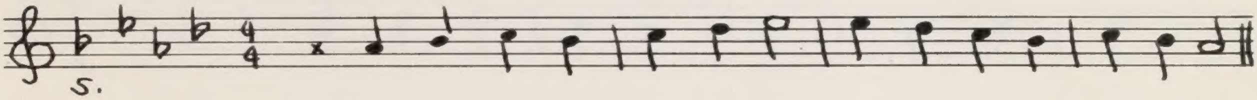
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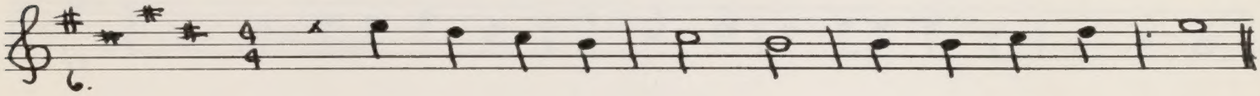
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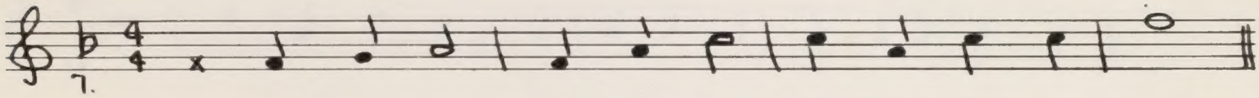
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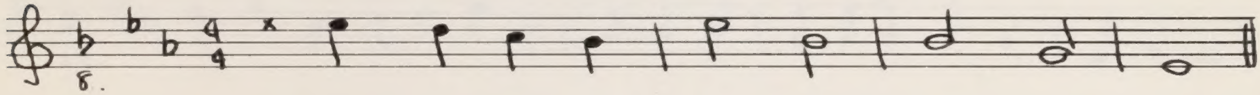
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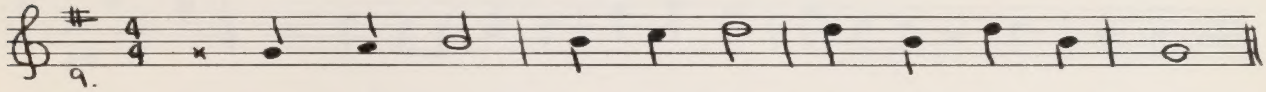
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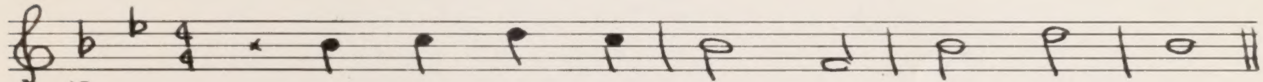
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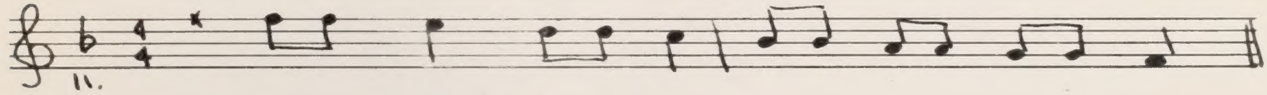
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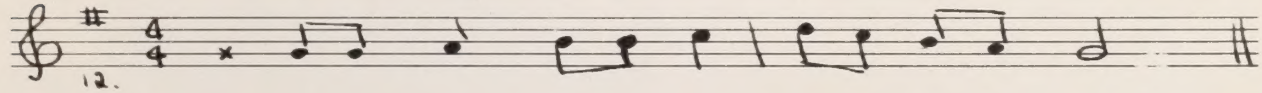
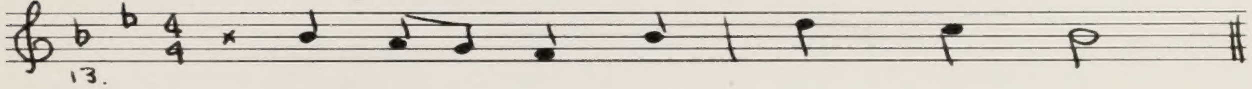

12.

BELWIN SPIRAL — Printed
— 96 — in U.S.A.

Grade Five Test Material.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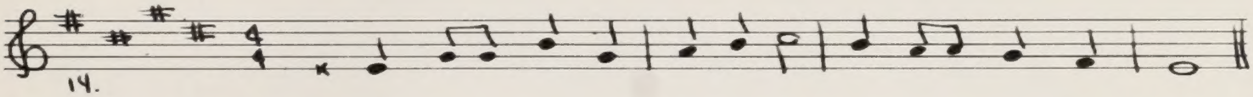
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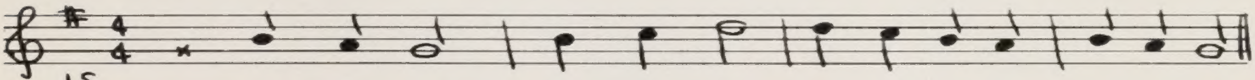
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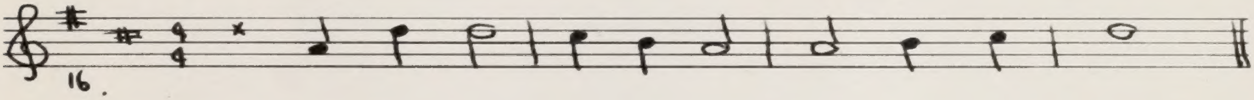
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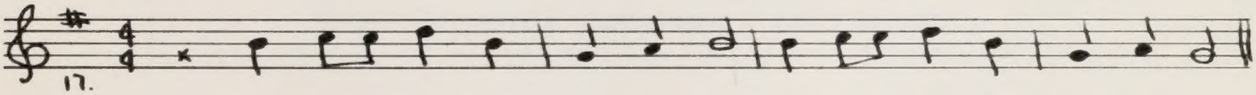
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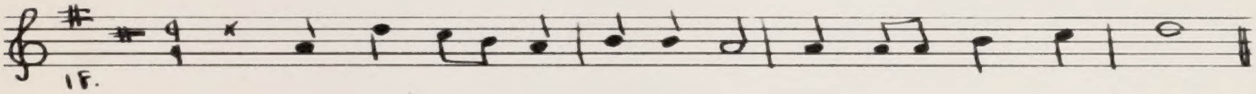
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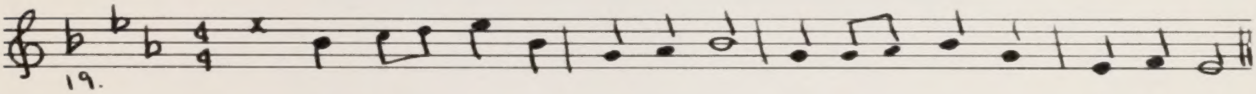
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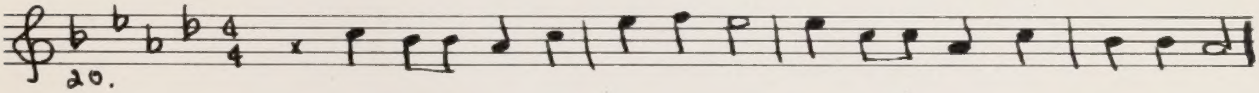
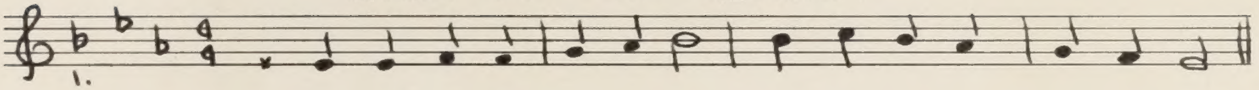

20.

Test Material for Music Dictation

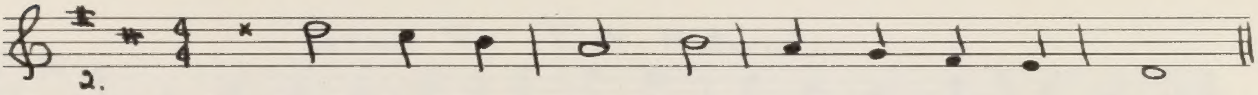
Grade Six

(For use by the test administrator)

Grade Six Test Material.



1.



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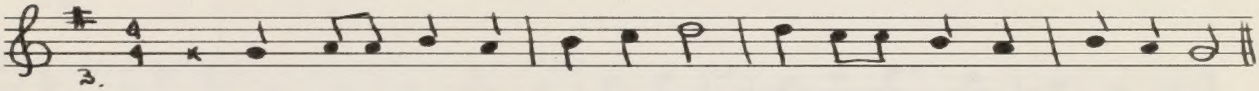

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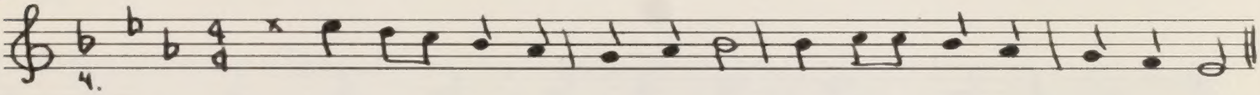

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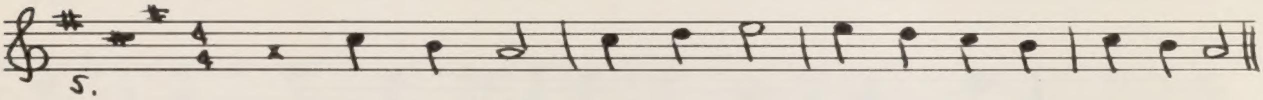

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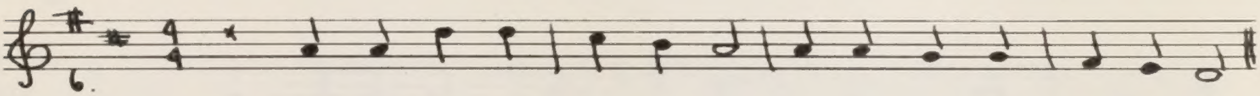

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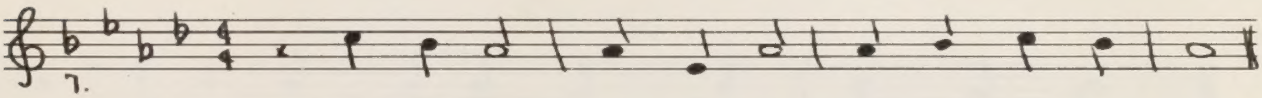

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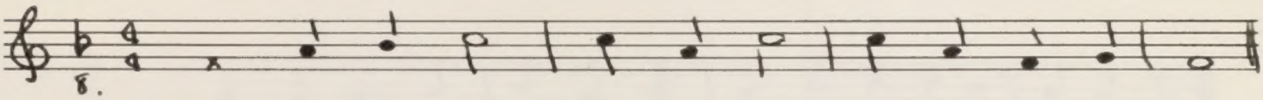

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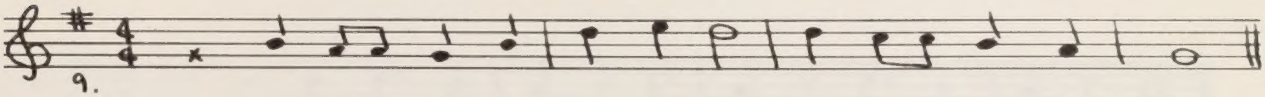

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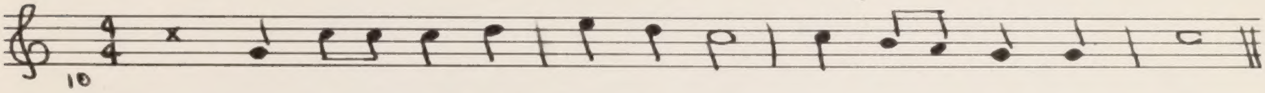

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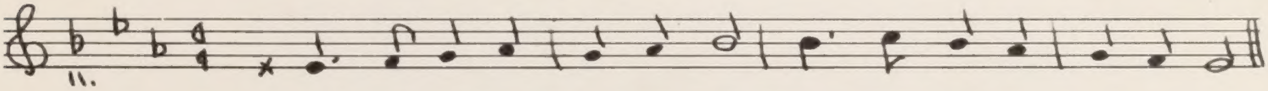

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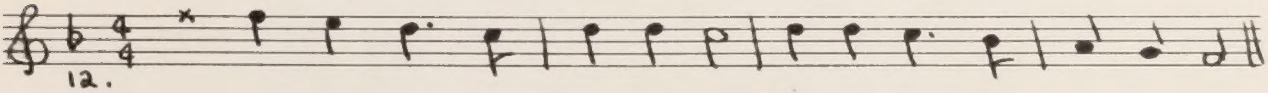
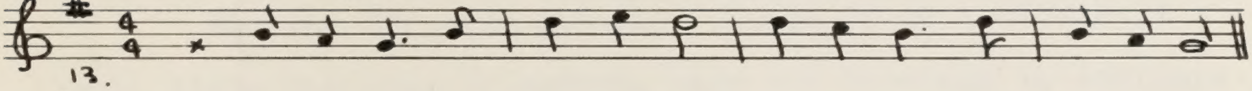


12.

BELWIN SPIRAL — Printed
— 96 — in U.S.A.

Grade Six Test Material.



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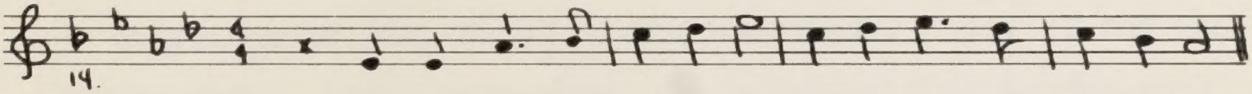

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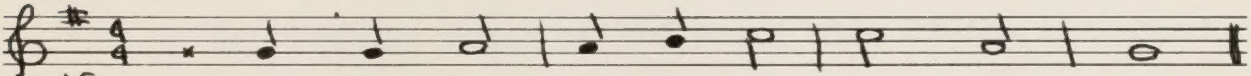

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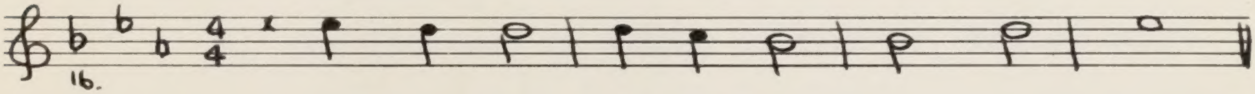

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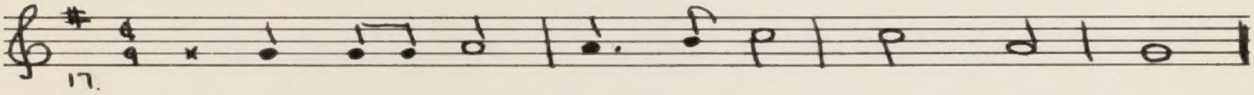

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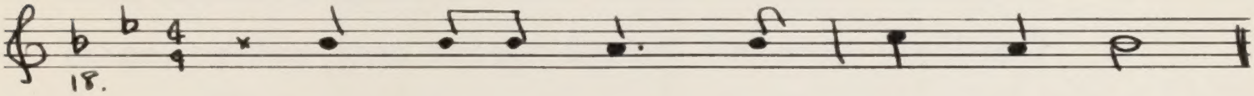

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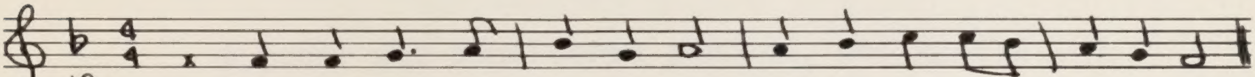

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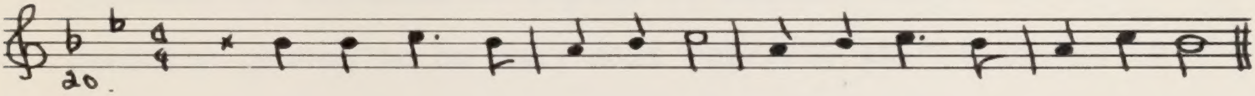

20.

Scoring the test material

Scoring the test material proved to be a difficult task, since mistakes in writing were not confined to rhythmic or melodic problems, found in the exercises. Some of the early difficulties, later corrected, may be classified as follows:

1. Putting stems on the wrong side of the note-head.
2. Carelessness in "filling-in" the quarter-notes.
3. Carelessness in making half-notes, dotted half-notes.
4. Inclination to "crowd" notes together. (Pupils with insecure motor skills tended to place notes one above the other, rather than widely spaced for easy reading.)

A paper was considered perfect, and graded 100, if it included no mistakes in rhythm or melodic line. If the exercise proved to be only half correct, it was graded to 50. A greater, or less, number of mistakes were proportionately graded. No exceptions were made, however, for careless work. If a note was written on the correct line or space, but represented the wrong time-value, five points were deducted from the total score. A similar deduction was made where the correct time-value was indicated, but where the note was on the wrong staff position. If the note and rhythm were both wrong, ten points were deducted.

Every precaution was taken to assure that the pupils understood the correct position of "Do". Preliminary to the hearing of each dictation melody, pupils were instructed, in addition to the formation of the G clef and the placement of the signatures of time and key, to locate and check the placement of "Do". As a double-check, a duplication of the staff would be placed on the blackboard, with similar exact information for comparison by the pupils. Yet many pupils would un-thinkingly start the first note at the wrong pitch-level, thereby indicating the wrong note-sequence. However, if the entire melody was written correctly, even though at the wrong key-sequence, only a few points were deducted.

When corrections of the test material were being made, following each testing period, constructive comments were written on the individual test papers concerning the appearance of notes, spacing, size of penmanship, etc., as an inducement toward individual improvement. Corrected papers were returned as soon as possible to the respective teachers, who in turn reviewed the problems with the pupils. In this way, pupils were able to discover their mistakes, and the teacher could plan remedial daily drill.

Tabulation of the test scores

After the individual papers of each class had been corrected, and graded, their scores were recorded on a tabulation chart. The horizontal line of the chart shows the progress of each individual from week to week. The vertical scores were used to compute the bi-weekly class median, and the corresponding class mathematical mean. (The class median is understood to be the middle point of a regular succession of individual scores; the mathematical mean is understood to be the sum of all individual scores, divided by the number of pupils tested on any particular day.)

When the corrected test papers were returned to the classroom teacher, a chart showing the class median, and the class mathematical mean, for that particular test was included. In this way, the teacher could keep a record of class progress.

Test Scores

Each chart shows the weekly succession of the individual scores, the class median, and the class mathematical mean.

Experimental School "A"
Grade IV

Individual Scores

Pupil's Name																				
E.M.	100	100	100	80	100	100	100	75	100	95	85	100	100	100	--	--	80	100	75	100
N.T.	100	100	95	90	100	95	100	100	100	90	100	85	100	100	100	95	95	100	100	100
L.H.	100	95	--	--	100	100	100	90	100	100	100	95	100	100	100	95	95	100	95	100
I.M.	100	90	90	80	100	75	100	75	90	95	100	80	100	100	100	80	100	100	100	100
I.R.	100	50	80	100	85	75	75	60	100	100	80	80	100	75	80	60	75	75	95	100
N.S.	100	40	75	40	80	70	100	50	100	50	90	90	100	80	75	75	100	90	85	100
R.C.	80	100	90	80	95	80	100	85	--	--	60	100	100	95	95	100	100	90	75	100
J.F.	95	40	95	90	20	50	90	85	70	30	75	95	80	50	80	80	95	85	100	100
J.W.	90	40	80	100	25	75	100	75	100	90	100	100	100	85	100	95	90	90	95	100
L.S.	85	50	85	70	100	75	85	50	100	100	95	100	100	90	95	90	95	100	90	100
J.C.	75	75	75	50	60	50	40	75	85	40	80	80	40	70	80	80	85	40	100	85
P.S.	75	40	75	40	50	50	90	95	70	90	90	75	95	80	95	85	95	100	100	100
S.D.	60	40	--	--	50	70	100	90	75	90	75	80	95	90	75	85	95	80	95	75
R.D.	60	40	90	75	50	40	50	20	50	40	20	40	70	60	60	50	30	30	50	40
J.V.	50	50	--	--	50	60	50	20	60	80	--	--	50	60	40	60	60	40	--	--
P.C.	50	40	95	80	30	40	50	30	60	30	30	40	--	--	40	30	50	40	30	30
G.M.	50	40	75	20	30	70	40	20	75	10	40	40	30	60	40	60	75	75	30	30
C.S.	50	30	75	75	30	50	40	40	75	40	70	40	75	50	40	70	40	60	40	60
M.C.	40	30	40	30	30	20	50	40	50	30	40	50	75	75	40	40	30	60	60	20
D.DeC.	40	20	60	40	60	60	65	30	40	40	30	20	30	20	30	75	70	40	50	70
D.A.	30	30	20	50	50	50	60	60	60	60	40	75	40	50	50	75	75	60	85	100
M.M.	30	0	20	10	10	20	20	20	40	20	20	20	30	40	20	30	30	30	20	30
J.R.	20	40	90	40	20	40	50	50	75	30	30	30	40	50	60	60	60	60	30	40
S.C.	20	20	20	50	40	40	30	40	40	30	30	40	30	40	40	30	60	60	20	40
A.M.	20	20	30	40	20	20	50	40	40	30	20	30	40	50	40	40	40	40	30	20
E.B.	--	--	--	--	60	50	30	40	75	30	20	50	40	60	60	60	60	70	50	40
J.M.	--	--	--	--	40	40	--	--	60	30	30	40	50	60	40	40	50	40	40	30
Class Median:	60	40	78	60	50	50	63	50	75	40	65	75	75	65	60	73	75	73	75	80
Class Arithmetic Mean:	65	59	71	60	55	58	68	56	73	56	60	64	70	69	64	67	71	69	67	70

Individual Scores
Experimental School "A" Grade IV
52

Experimental School "B" Individual Scores
Grade IV

Pupil's Name																				
M.A.A.	100	100	100	75	100	100	100	100	100	100	85	90	85	70	95	100	95	100	95	100
R.S.	100	100	100	80	100	80	90	80	100	100	100	100	100	95	100	100	100	100	100	100
N.H.	100	100	100	100	100	95	100	100	100	100	100	95	100	100	100	95	85	100	85	100
J.McQ.	100	100	75	80	100	75	100	100	95	100	100	75	50	60	--	--	60	85	80	90
C.K.	100	100	100	100	100	100	100	80	100	100	100	75	--	--	100	100	100	100	--	--
R.G.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	95	100	100	100	100
P.B.	100	95	100	75	100	75	100	75	100	100	60	100	80	100	75	70	60	85	60	70
M.M.	100	95	90	100	100	100	100	100	100	100	100	60	90	100	80	90	100	90	85	75
M.M.H.	100	90	80	75	60	75	75	75	100	40	75	50	40	40	40	40	85	95	90	80
H.R.	100	80	95	90	80	90	--	--	95	100	--	--	100	95	--	--	100	80	--	--
S.T.	100	75	100	100	100	95	100	50	90	100	90	95	100	75	85	80	85	90	95	90
W.J.	90	100	100	90	80	75	--	--	85	40	75	80	75	60	95	70	95	40	--	--
N.E.	95	95	100	95	95	70	100	100	100	95	50	85	--	--	100	95	75	80	90	100
D.B.	95	95	80	80	75	60	80	75	85	70	20	75	40	40	30	30	60	70	50	50
F.J.C.	95	90	75	75	75	75	75	50	80	75	40	50	100	40	75	40	60	85	70	40
R.L.	90	80	60	20	40	60	40	40	30	40	--	--	50	40	50	50	50	30	40	60
P.M.	80	80	90	90	85	70	80	85	75	100	--	--	75	75	50	40	50	50	50	60
S.B.	75	50	60	50	60	40	60	60	95	40	60	50	60	90	60	60	--	--	40	70
J.H.	60	50	60	50	60	60	50	60	90	75	--	--	95	60	60	50	--	--	85	75
V.J.	60	40	30	40	50	60	40	30	30	30	40	40	40	60	30	50	85	85	80	85
B.C.	50	60	--	--	80	40	--	--	100	90	60	85	60	60	50	40	40	95	95	90
C.A.J.	50	30	50	40	40	60	--	--	70	70	40	60	40	30	50	30	75	60	80	50
J.F.	50	20	80	50	--	--	40	40	50	20	--	--	40	30	--	--	50	40	60	75
A.B.	40	20	40	30	40	50	30	30	--	--	40	10	30	30	30	20	20	20	30	30
C.P.	30	30	30	50	30	30	30	30	30	40	20	40	50	40	30	30	40	30	40	30
S.B.	30	10	10	10	40	30	30	20	--	--	20	30	30	30	30	30	40	20	50	30
C.M.	20	20	--	--	40	50	--	--	60	40	75	60	--	--	--	--	75	40	40	50
B.S.	20	20	50	40	--	--	20	30	20	20	60	30	40	30	30	30	20	20	40	30
W.B.	20	10	30	30	30	40	30	30	30	20	30	20	40	60	40	40	70	60	50	40
Class Median:	90	80	80	75	80	70	78	68	90	75	60	68	60	60	60	50	75	80	75	73
Class Arithmetic Mean:	74	67	74	67	74	69	70	64	78	71	64	65	66	62	63	59	69	69	68	68

Individual Scores
Experimental School "B" Grade IV
53

Experimental School "C"
Grade IV

Individual Scores

Pupil's Name																				
G.C.	100	100	95	95	95	95	100	100	100	100	100	100	100	100	100	100	100	100	100	100
P.M.	100	95	100	90	--	--	60	60	100	100	100	100	80	100	95	100	100	100	100	100
B.G.	100	95	75	50	95	90	50	90	--	--	100	95	75	50	100	75	90	100	75	85
T.S.	100	95	90	75	75	75	50	50	100	90	85	75	75	60	80	75	80	75	60	85
W.P.	95	100	100	95	95	95	60	100	100	100	--	--	100	100	100	100	100	100	100	100
E.McF.	95	95	100	50	10	50	50	90	100	100	90	100	--	--	95	100	95	100	100	100
D.H.	90	100	80	80	50	80	40	95	100	100	100	90	95	95	90	100	95	95	80	100
N.T.	90	95	90	80	90	60	40	60	95	90	90	90	100	85	75	75	80	85	80	90
D.S.	90	90	95	50	90	50	95	75	80	80	100	100	50	75	75	90	95	95	90	100
L.M.	90	50	40	50	40	50	40	50	75	40	70	30	40	40	50	40	90	60	75	80
S.G.	95	30	80	70	100	60	--	--	--	--	--	--	80	75	80	100	100	100	95	100
B.T.	80	95	95	75	100	85	75	50	--	--	90	90	75	70	90	75	100	40	80	85
W.C.	75	75	95	80	90	50	40	60	60	40	80	90	50	40	75	80	90	85	75	70
D.S.	75	75	90	80	90	80	40	50	100	100	95	85	75	70	--	--	100	75	75	80
H.C.	75	60	70	80	85	40	50	60	100	80	85	100	85	75	--	--	95	95	95	95
W.C.	75	50	40	40	60	60	30	30	40	40	--	--	30	30	40	40	30	30	40	30
B.T.	75	40	75	40	50	40	40	40	40	40	80	40	40	30	40	40	40	70	70	60
L.E.	60	75	80	75	75	60	50	50	85	75	80	85	80	80	--	--	75	90	40	90
W.G.	60	50	60	50	40	40	60	30	80	85	75	75	40	40	50	40	80	85	60	85
J.P.	60	40	50	40	60	40	50	40	--	--	50	30	40	60	--	--	75	85	40	70
H.C.	50	90	100	100	100	100	95	100	--	--	100	100	100	100	100	100	100	100	100	100
E.P.	50	50	100	75	80	60	75	75	--	--	100	100	100	75	70	90	90	100	85	85
B.L.	50	20	30	40	60	40	50	40	--	--	75	40	--	--	70	80	80	85	90	85
B.B.	40	40	20	20	40	40	30	20	40	30	30	20	40	30	50	40	--	--	--	--
R.A.	40	20	--	--	40	20	40	30	90	80	30	20	40	30	50	40	90	85	40	60
M.P.	30	30	40	50	50	50	75	40	95	50	100	40	60	30	75	75	--	--	--	--
E.P.	30	30	20	10	50	40	20	40	--	--	30	40	50	30	40	50	50	40	40	50
L.D.	30	20	20	20	Left	School														
M.P.	--	--	75	50	30	50	50	75	50	60	40	30	50	50	85	75	80	85	60	70
Class Median:	75	68	80	60	75	50	50	50	93	80	85	85	75	65	75	75	90	85	78	85
Class Arithmetic Mean:	71	64	72	61	68	59	54	59	82	74	79	71	68	62	74	74	85	83	75	83

Individual Scores
Experimental School "C"
Grade IV

Experimental School "A"
Grade V

Individual Scores

Pupil's Name																				
M.B.	100	100	100	100	100	100	95	100	100	100	85	80	85	90	--	--	100	95	100	100
E.S.	100	100	100	100	100	100	100	100	100	100	75	90	100	100	100	100	95	100	100	100
F.M.	100	100	100	95	60	100	50	70	75	40	90	50	60	40	80	40	80	40	75	80
F.S.	100	100	100	100	100	95	95	80	100	100	80	80	100	85	100	100	75	95	90	95
B.K.	100	95	100	100	100	100	90	100	100	100	100	85	100	80	100	100	100	95	100	75
S.W.	90	100	100	100	80	100	60	100	100	70	100	85	80	90	100	100	95	95	85	75
A.C.	100	90	100	100	100	100	--	--	100	95	100	100	100	85	100	100	80	75	90	85
I.D.	100	50	90	95	100	95	50	90	100	80	85	80	85	60	100	80	90	90	85	80
L.L.	85	100	--	--	75	50	50	30	60	40	75	40	50	40	40	40	40	50	40	40
M.O.	95	50	100	100	100	90	60	75	85	100	50	80	100	85	85	90	75	90	90	100
B.C.	80	90	100	100	95	100	60	75	100	75	95	75	95	75	100	85	75	85	85	85
M.C.	80	40	40	20	95	75	80	75	75	75	50	40	85	30	80	50	70	50	--	--
A.M.	75	100	100	100	100	100	95	100	100	90	85	95	100	100	100	100	100	100	95	95
A.S.	75	100	100	100	90	100	80	95	75	40	90	60	80	60	95	75	90	80	75	80
B.C.	75	75	90	75	95	85	50	50	60	50	95	85	85	50	85	75	40	50	75	75
M.C.	75	75	100	100	100	100	90	90	100	80	95	80	100	100	95	100	100	100	100	100
T.C.	75	50	100	75	75	100	70	50	75	80	40	50	90	60	95	50	75	60	60	60
S.A.R.	50	100	--	--	50	60	--	--	40	50	50	50	60	60	50	80	50	60	60	60
H.M.	60	60	90	60	90	50	50	80	75	60	80	50	60	85	85	90	70	75	75	80
I.G.	50	75	100	90	100	95	60	90	100	90	100	90	85	60	100	100	75	90	90	85
D.M.	80	50	80	95	75	95	60	50	80	50	90	90	90	50	75	50	90	30	60	70
F.P.	50	50	--	--	90	60	30	50	40	40	50	40	30	30	40	50	30	30	50	50
J.R.	50	50	--	--	100	85	60	70	75	80	85	60	50	40	50	75	95	95	85	60
A.C.	40	80	60	75	75	90	40	75	80	60	85	75	80	60	40	75	50	50	--	--
H.V.	40	40	--	--	80	50	--	--	80	40	75	60	60	60	--	--	60	60	60	50
L.L.	10	30	95	75	75	40	30	40	--	--	100	85	80	75	60	75	60	60	75	70
J.M.	--	--	--	--	60	75	50	50	40	40	50	40	40	30	40	50	40	40	40	50
Class Median:	78	78	100	100	95	95	60	75	80	75	85	80	85	60	85	80	75	78	85	80
Class Arithmetic Mean:	74	75	93	88	87	85	65	74	81	70	80	70	79	66	80	77	74	72	78	76

Individual Scores

Experimental School "A"

Grade V

55

Experimental School "B"
Grade V

Individual Scores

Pupil's Name																				
P.W.	100	100	100	100	100	95	100	100	100	100	100	100	100	70	100	100	100	100	100	90
F.G.	100	100	100	100	100	100	100	100	100	100	100	100	100	80	100	100	100	100	90	90
J.R.	100	100	100	75	100	100	100	75	--	--	100	75	80	50	100	100	90	100	100	95
E.V.	100	100	100	100	100	100	95	90	100	90	100	100	100	30	100	40	100	95	95	90
L.W.	100	100	100	100	100	100	100	100	--	--	100	90	40	30	100	85	90	100	100	100
A.L.	100	100	95	90	100	100	100	100	100	100	100	95	100	95	100	95	95	100	100	95
R.C.	100	100	100	100	--	--	90	100	100	90	75	60	40	90	60	75	100	75	80	70
T.C.	80	100	80	95	75	100	95	100	100	90	90	80	80	75	100	50	75	50	60	40
C.A.	95	80	80	100	80	95	40	30	95	80	80	80	40	75	80	40	80	75	50	80
L.D.	75	100	100	100	--	--	--	--	100	85	100	100	100	80	85	85	95	95	90	85
C.D.	100	80	100	90	100	100	95	90	--	--	90	85	100	70	100	40	100	95	75	90
A.R.	100	75	80	75	100	100	85	70	--	--	95	75	30	40	100	80	95	50	85	40
R.C.	50	100	90	90	40	60	75	100	--	--	85	60	90	70	70	60	70	60	75	40
L.B.	100	40	90	90	60	60	40	60	85	90	95	75	95	60	100	85	95	95	90	75
E.S.	90	90	--	--	50	50	--	--	60	30	100	85	--	--	85	60	80	50	70	95
M.N.	80	80	100	100	100	100	95	95	100	100	75	75	100	75	100	95	100	95	90	95
R.P.	80	40	50	50	50	60	80	75	75	90	40	60	--	--	50	90	60	70	75	50
D.S.	75	75	90	100	100	95	90	95	100	90	95	95	--	--	90	40	75	90	80	70
J.M.	75	50	75	60	--	--	--	--	100	90	100	95	50	30	--	--	50	30	30	50
C.C.	75	40	90	90	50	75	50	50	90	50	95	75	40	40	50	60	40	40	75	60
L.C.	75	40	75	75	40	60	30	20	40	30	30	30	30	40	40	40	40	40	30	30
A.E.	60	60	75	75	50	30	95	20	40	20	90	75	90	40	75	75	50	60	40	50
S.M.	40	80	60	60	50	70	--	--	100	75	95	80	40	40	40	40	80	70	75	50
T.McQ.	75	40	95	80	40	50	60	70	60	20	60	40	30	20	90	30	--	--	--	--
B.	75	20	60	50	40	40	40	60	40	30	40	70	60	40	40	30	50	50	40	40
G.B.	40	75	100	75	85	85	85	75	95	85	80	95	95	30	85	40	85	85	80	75
A.S.L.	40	20	75	50	70	90	40	95	100	75	95	50	40	75	100	40	95	50	60	75
H.R.	20	10	75	60	40	50	20	30	30	60	50	75	30	50	30	30	50	40	40	30
Class Median:	80	80	90	90	75	90	88	83	100	85	95	78	80	50	90	75	85	75	75	75
Class Arithmetic Mean:	79	71	86	83	73	79	75	75	83	73	87	81	68	56	80	61	79	73	73	69

Individual Scores

Experimental School "B" Grade V

Experimental School "C"
Grade V

Individual Scores

Pupil's Name																				
C.C.	100	100	100	100	75	95	100	75	85	90	100	100	100	95	100	100	100	100	100	100
C.A.K.	100	100	100	100	100	100	95	100	100	100	100	100	100	100	100	100	100	100	80	90
B.T.	100	100	95	95	100	95	100	100	100	90	100	95	85	100	100	100	100	100	95	100
G.L.	100	75	80	80	80	85	70	50	60	75	30	40	40	40	75	90	40	60	40	60
F.A.	100	75	75	50	75	90	50	60	60	70	--	--	70	75	50	50	50	80	60	60
U.B.	95	95	100	100	--	--	--	--	--	--	80	95	--	--	100	100	100	100	50	100
R.F.	95	80	90	75	75	85	30	40	50	60	80	85	40	40	40	75	75	75	60	75
R.N.	95	75	90	90	100	95	85	75	100	75	100	80	--	--	85	95	75	80	75	60
J.C.	90	100	100	100	100	100	95	90	100	100	100	100	85	75	100	100	75	85	85	75
J.A.	90	95	75	80	100	85	90	75	80	90	100	85	90	75	80	70	40	40	40	40
C.J.	90	95	100	100	100	100	100	100	100	100	--	--	90	75	100	100	75	95	90	90
R.P.	90	90	100	100	90	95	80	80	80	100	95	95	40	75	85	90	60	70	50	40
A.L.	90	80	90	75	80	30	50	60	60	40	50	60	85	40	80	40	40	50	50	40
J.C.	90	75	100	100	70	40	95	100	95	70	100	75	40	75	--	--	70	95	75	60
R.C.	90	60	--	--	75	90	50	40	50	90	90	80	60	30	50	50	40	60	50	40
F.S.	90	40	80	80	80	50	50	60	85	80	70	60	75	40	80	70	40	40	30	40
M.L.W.	85	85	80	100	100	90	85	85	100	85	95	75	100	75	90	95	100	--	--	--
I.A.	85	70	40	80	60	50	80	75	80	70	80	60	20	85	85	50	50	70	75	80
L.H.	80	90	100	95	100	100	100	80	90	100	100	100	95	40	100	100	100	100	95	100
A.R.	80	75	75	75	80	85	60	30	75	40	90	85	60	40	60	40	40	70	80	85
G.C.	75	95	100	100	95	75	95	75	100	100	100	90	50	30	90	100	40	75	85	50
V.C.	75	100	95	95	100	100	100	100	100	95	100	100	100	90	100	95	75	95	85	95
W.M.	75	100	100	100	100	75	90	80	100	75	100	90	85	75	85	80	50	60	75	85
F.P.	75	90	75	50	75	40	40	30	40	30	90	50	40	60	--	--	50	50	50	40
W.B.	75	75	--	--	40	40	40	20	50	40	30	30	60	60	--	--	40	--	--	--
J.A.S.	75	75	90	90	85	50	60	75	50	40	85	75	50	50	50	75	50	50	40	40
J.S.	75	75	50	75	75	80	50	20	80	80	60	40	75	40	70	75	40	50	40	60
F.F.	75	75	95	95	75	90	40	30	75	75	60	60	95	60	--	--	30	40	50	60
R.W.	75	75	90	75	70	70	40	40	40	40	40	75	40	40	75	60	50	70	60	50
T.C.	75	50	75	50	75	50	30	60	--	--	100	75	Left School							
J.B.	75	40	--	--	60	50	60	60	60	60	40	40	60	50	50	50	40	40	40	40
R.N.	60	10	90	90	40	40	40	40	50	40	40	40	30	60	30	40	30	40	30	30
W.P.	40	40	75	75	75	75	--	--	50	60	75	75	60	60	75	50	--	--	50	40
M.P.	40	30	50	50	30	30	20	20	--	--	30	20	--	--	20	30	30	30	20	20
P.A.V.V.	10	40	10	10	--	--	20	10	30	30	30	30	30	30	20	30	30	30	30	40
R.K.	10	20	40	60	80	50	--	--	50	40	40	40	--	--	40	50	--	40	30	30
C.H.	--	--	95	50	95	100	50	60	85	70	100	80	75	40	75	60	85	60	60	75
Cl.Med.:	83	75	90	85	80	85	60	60	80	75	90	75	65	60	80	75	50	70	55	60
Cl.Arithmetic Mean:	78	73	82	81	80	74	66	62	74	71	76	71	66	60	73	72	59	67	60	61

Individual Scores

Experimental School "C" Grade V

57

Experimental School "A"
Grade VI

Individual Scores

Pupil's Name																				
C.A.	100	100	100	100	100	100	100	100	100	100	100	100	95	100	85	95	100	100	100	100
C.S.	100	100	100	95	75	80	75	50	60	60	85	90	75	90	80	100	85	75	85	100
F.R.	100	100	95	100	100	100	95	100	75	90	100	100	100	90	100	95	90	95	100	100
M.W.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	95	100	100	95	100
J.F.	100	100	100	75	95	95	30	70	100	75	100	85	100	100	80	80	75	100	85	90
G.H.	100	95	--	--	--	--	95	80	75	85	--	--	75	100	75	85	75	75	80	75
F.S.	100	95	90	100	50	50	100	50	60	50	70	60	50	80	75	85	60	75	85	90
D.M.	95	100	95	100	75	90	95	100	90	50	100	95	95	75	85	85	100	100	100	100
R.B.	95	95	90	60	50	75	20	20	30	30	75	30	30	80	85	85	85	70	75	70
E.C.	85	100	75	80	100	50	75	75	80	40	85	80	85	60	80	75	85	90	85	90
E.A.	90	100	100	75	100	100	100	80	100	90	100	100	85	100	70	85	100	100	90	95
N.H.	100	80	100	100	100	100	100	100	95	50	100	100	90	100	100	100	95	95	100	90
R.G.	100	75	100	50	80	50	50	70	50	20	100	75	--	--	30	75	60	60	75	70
A.B.	50	100	75	75	40	40	75	40	50	30	75	80	75	75	75	75	75	75	90	85
S.R.	95	95	--	--	75	40	75	75	75	70	75	30	60	90	80	80	85	75	85	90
L.P.	75	100	100	75	100	100	90	90	75	75	100	100	100	90	100	90	75	85	85	90
D.S.	95	75	80	75	50	50	85	50	80	70	75	75	75	60	70	75	80	75	75	80
L.Q.	95	75	50	50	75	75	75	50	60	75	70	70	60	75	75	75	85	95	85	90
J.L.	75	90	80	90	50	50	60	50	50	60	100	60	80	75	60	60	75	40	75	85
W.G.	75	75	90	75	0	85	50	80	90	90	85	75	90	95	85	40	30	75	85	80
M.C.	75	50	80	50	40	50	40	40	75	50	75	75	85	40	50	30	60	75	90	75
A.S.	100	40	90	50	80	50	80	80	60	60	70	90	75	75	85	50	70	80	75	80
J.L.	50	50	50	50	50	50	Left School													
L.F.	50	40	50	40	50	30	20	30	70	40	60	50	80	50	80	75	60	75	75	80
J.B.S.	50	40	--	--	60	40	30	20	40	30	50	60	60	50	40	75	40	40	40	30
J.L.	--	--	--	--	60	50	0	0	Left School											
W.R.	40	40	90	75	75	50	60	60	60	75	90	85	50	75	100	40	40	30	80	85
E.R.	30	30	40	50	75	50	60	60	75	70	75	80	75	80	75	75	75	75	75	85
E.M.	10	75	60	75	50	40	50	60	60	60	75	60	75	75	40	30	--	--	75	70
J.S.	10	10	40	40	30	20	30	40	70	75	75	75	40	40	30	40	50	50	60	70
J.M.	--	--	--	--	80	90	90	100	50	70	80	75	80	40	60	75	95	90	90	95
Class Median:	95	90	90	75	75	50	75	65	75	70	83	78	78	78	80	75	78	75	85	85
Class Arithmetic Mean:	77	77	82	73	69	65	67	64	71	59	84	77	76	77	74	73	75	78	83	84

Experimental School "A"
Individual Scores
Grade VI
58

Experimental School "B" Grade VI **Individual Scores**

Pupil's Name																				
C.B.	100	100	95	75	100	100	75	60	70	100	75	85	60	85	90	95	95	95	95	95
M.S.	100	100	75	90	100	100	100	100	100	100	80	80	75	85	100	95	85	90	95	90
M.E.	100	100	100	95	100	85	100	100	60	100	80	75	80	90	100	100	95	100	70	100
G.A.	100	100	95	90	100	95	--	--	30	--	--	--	80	75	60	95	--	--	--	--
R.C.	100	100	80	75	100	75	100	70	75	80	--	--	75	90	80	70	85	95	95	80
C.S.	100	100	75	100	100	100	100	100	100	--	70	40	50	90	75	75	75	85	80	90
W.P.	90	100	90	90	100	100	80	30	80	75	85	85	75	85	85	95	95	90	70	85
W.B.	75	100	90	80	75	75	90	75	75	40	70	60	50	80	100	80	100	85	95	85
R.C.	50	100	50	50	100	90	90	65	75	40	40	60	40	40	75	75	80	75	75	70
D.S.	40	100	80	60	100	70	80	70	30	50	80	40	75	40	50	60	80	70	75	70
D.B.	80	80	95	75	75	90	80	40	60	50	50	50	--	--	60	75	90	75	85	70
B.C.	90	40	90	90	50	40	90	80	75	80	75	70	60	70	80	60	85	75	85	75
J.C.	75	80	50	75	80	85	40	90	60	90	60	50	90	75	80	100	85	70	85	75
C.W.	75	75	75	75	75	50	75	60	50	60	60	70	70	75	40	60	75	70	80	75
M.J.	60	60	--	--	75	50	40	40	40	50	75	60	50	50	70	70	--	--	--	--
B.B.	50	60	75	50	50	60	50	60	75	40	50	40	60	70	100	70	60	50	70	40
J.V.	50	40	30	40	50	30	40	40	30	30	--	--	40	40	40	40	50	70	60	50
D.G.	50	30	75	60	50	40	40	20	75	40	40	30	50	60	--	--	70	50	60	50
A.H.	30	40	75	80	40	50	90	80	30	40	70	30	50	40	30	30	--	--	--	--
P.P.	20	90	20	20	40	20	75	40	20	30	40	40	70	40	--	--	60	50	60	40
C.A.	20	20	50	50	50	50	50	50	70	40	40	40	60	60	30	40	50	40	60	70
N.B.	20	20	50	60	50	40	20	40	30	40	30	40	50	40	40	30	40	50	50	40
G.B.	20	20	--	--	20	10	40	30	20	30	30	30	30	30	40	40	40	30	40	50
N.N.	20	20	20	20	--	--	40	30	50	30	30	30	30	40	60	60	40	50	50	40
M.D.	20	20	20	10	10	20	30	20	30	--	--	--	20	20	30	20	Left School			
Class Median:	60	80	75	75	75	65	75	60	60	45	60	50	60	65	70	70	80	70	75	70
Class Arithmetic Mean:	61	68	68	66	70	64	67	58	56	56	58	53	58	61	66	67	73	70	73	69

Individual Scores

Experimental School "B" Grade VI

59

Experimental School "C"   Individual Scores
Grade VI

Pupil's Name																				
F.B.	100	100	100	100	100	100	100	100	--	--	90	100	100	100	100	100	100	100	95	100
E.P.	100	100	50	50	30	85	75	75	85	75	75	40	85	50	85	75	60	50	70	75
K.A.	100	100	100	100	100	100	90	90	100	100	90	90	75	100	85	85	85	100	85	90
B.L.	100	100	80	80	100	90	85	75	75	60	90	60	75	75	60	50	--	--	95	90
J.P.	100	95	95	90	95	95	95	75	75	90	80	80	100	100	95	95	60	50	95	60
M.W.	100	95	40	75	60	30	75	50	50	50	50	50	60	30	60	40	50	50	60	50
A.M.G.	100	90	75	100	100	100	90	75	75	75	75	80	75	75	85	80	40	85	70	50
E.C.	95	95	80	80	40	40	80	40	70	40	60	60	75	95	50	75	60	80	85	75
R.C.	95	95	50	80	80	75	75	40	50	75	60	75	70	75	60	70	60	50	90	80
B.C.	95	75	--	40	50	85	50	30	50	50	60	75	40	30	90	30	50	70	50	80
D.C.	95	50	80	--	--	30	10	10	60	60	70	40	75	50	75	80	75	70	80	85
A.S.	90	60	50	80	100	75	75	75	70	40	80	40	80	85	--	--	60	75	75	70
R.O.	90	50	60	80	40	40	60	40	50	50	75	70	75	40	40	50	--	--	50	40
L.F.	75	50	50	10	10	20	30	30	20	20	--	--	30	30	60	60	60	50	40	50
C.S.	75	40	50	75	80	60	30	20	75	60	75	75	75	60	50	40	40	50	80	60
E.C.	60	50	30	40	30	20	30	20	75	75	60	20	50	40	40	60	70	30	40	40
W.B.	50	50	40	30	50	20	20	30	50	30	30	40	60	40	40	30	40	30	40	40
M.M.	50	50	40	50	30	30	50	50	40	50	30	30	30	40	--	--	40	90	50	60
D.G.	50	20	30	--	--	30	60	50	50	60	40	40	40	40	60	50	50	40	60	40
D.DeC.	40	50	10	20	20	60	20	30	30	20	40	50	30	30	30	50	40	85	85	50
E.W.	20	50	40	50	40	30	50	30	30	30	40	30	75	30	40	30	30	30	--	--
F.G.	20	50	40	40	30	30	20	20	40	20	50	30	30	30	40	30	70	75	75	40
E.V.	20	20	20	20	10	20	20	10	20	10	20	30	20	30	30	30	30	40	40	30
P.R.	20	20	20	10	10	30	30	30	30	40	30	20	40	40	30	30	--	--	40	30
B.H.	--	--	90	90	100	--	--	--	80	75	--	--	75	100	50	75	50	60	75	85
L.F.	--	--	40	30	40	20	20	30	40	30	50	40	60	40	40	50	75	90	50	70
R.T.	--	--	75	90	80	100	90	75	--	--	--	--	75	80	90	90	--	--	--	--
C.R.	--	--	--	--	--	--	--	--	40	30	20	20	30	30	30	60	80	75	40	30
Class Median:	90	50	50	75	50	40	55	40	50	50	60	40	73	40	55	55	60	65	70	60
Class Arithmetic Mean:	73	65	55	60	57	54	55	46	55	51	58	51	61	56	59	58	57	64	66	60

Individual Scores
Experimental School "C"   Grade VI

Observations and Comments

It seems evident, in this first year of a trial project in music dictation, that the pupils having the greatest amount of difficulty were those in the sixth grade, and that those enjoying the greatest amount of success were in the fifth grade. Among the possible reasons for this situation might be that, since there had been no previous similar experience in music dictation by the sixth grade, there could be no accumulated skill and power upon which they might draw for background. Therefore, the accelerated approach to rhythmic and melodie problems in the material for Grade Six was proportionately more difficult. Grade Four, similarly, while also being confronted with a new experience, possessed less motor skill, and had had less experience with notes and note-reading. Consequently, Grade Four was confronted with a difficult problem of adjustment to a new medium of expression.

Grade Five, with a score-reading experience in excess of the previous grade, and confronted with a less accelerated approach to tonal and rhythmic problems, was better equipped to cope with the difficulties encountered in the project. The continued use of a course in the dictation of music would find an accumulated skill and power in each succeeding higher grade, and therefore we should find a greater success in achievement. Perhaps, for the initial venture, Grade Four should have been

given more preparation in the actual motor skills for making the written symbols of the score, and Grade Six should not have been placed under such an accelerated burden. However, it is felt that the existing material is not too difficult when sufficient experience has been accumulated by the pupils in the skill of music dictation.

From observations made relative to the difficulties encountered by Grade Four, in their attempts to adjust themselves to the dual problem of hearing, and recording, it is evident that preliminary ear-training in a previous grade might be most beneficial. For instance, the first half-year of Grade Three could be devoted to short drill in the making of rudimentary notes and note-values. This could be followed by such elementary directions as: "Find 'Do'; put a half-note on the place where 'Do' is". "Find 'Re'; put a quarter-note on the place where 'Re' is", etc. The latter half-year of Grade Three could be devoted to the writing of short melodies, of about four or five notes in duration. The teacher could sing the melody, the class could sing in repetition, indicating the correct scale syllables, then write the same. Such a procedure should do much if time were made available, to prepare the fourth grade for a course in dictation such as is presented in this thesis.

One second grade teacher, (not involved in this project), suggested starting elementary staff-making and

note-making in her grade as a corellation with art work. This teacher had already experimented in having her pupils perform just such a project, and reported an improvement of motor skills, and a keener perception of note-values, gained through the actual construction of the musical symbols.

In a study of the individual scores achieved in the dictation project, the first few scores, in most cases, were at a relatively high level. This was because the exercises were comparatively easy at the beginning of the project. As the project progressed, the problems became increasingly difficult, and as a result, the level of individual scores took a noticeable dip, as did the class median and class mathematical mean. Toward the close of the experimental period, when the pupils had really grasped the idea in the taking of music dictation, the total scores indicate a general rising to a point, in most cases, equal to, or greater than, the initial scores. This is especially significant, since the later dictation problems were far more difficult than those experienced at the beginning of the project. Furthermore, it might be assumed that a pupil who maintained a constant average in scores would not only be developing in ear-training, but would in reality be becoming progressively proficient in the skill of taking music dictation.

It is significant to note that the greatest amount of improvement, in the dictation project, was shown by those pupils in the middle range of the test scores (50-75). While it would be difficult to substantiate growth in every individual score, most cases in this particular group show a gain of from five to ten points. This would indicate that, while those pupils who were originally in the higher score bracket tended to improve. And it is precisely this middle range group of pupils who need the stimulus for growth which can be provided by a project of this type.

It was interesting to observe, while correcting the test material, that pupils appeared to experience greater difficulty in reproducing the correct rhythm than they did in recognizing tonal skips. This would indicate that, for the most part, individuals are more responsive to melodic content, but do not completely analyze rhythmic patterns. On the other hand, those pupils who achieved low scores in the dictation project showed marked improvement in rhythmic discernment and manual skill, in spite of the fact that they had difficulty in recognizing melodic successions. It would appear, from this observation, that pupils who have a tonal deficiency may be able to hear, to a greater degree, the rhythmic patterns of the exercise.

In attempting to obtain a corellation of achievement in music dictation with that of dictation in other school subjects, i.e.: English, or arithmetic problems, teachers observe that the children make just as many, if not more, careless and thoughtless mistakes in academic subjects other than music. For instance, the pupil may recite that four times nine are thirty-six; but he may write that four times nine are twenty-seven. Teachers seemed surprised that pupils made as few inaccuracies as was demonstrated.

This tendency toward careless work was also evident in the dictation results. Pupils would give every indication of hearing the correct tones, but the written version of the exercise might be far from correct. In checking with the classroom teachers in regard to daily drill, the teachers found that the pupils would recite the correct tones heard, yet would record something entirely different. Consequently this tendency to err might be very similar to that mentioned above in respect to other school subjects.

It seemed paradoxical, moreover, that pupils would reproduce one exercise practically correct, yet fail on a succeeding problem of no greater difficulty. There is the possibility that either lack of concentrated effort, or confusion on some small portion of the exercise, might throw the pupil off the track, thereby causing a wrong interpretation of the whole melody.

In one instance, where there was a change in classroom teachers during the course of the dictation series, the class made a noticeable drop in test scores. This may have been due to lack of continued guidance, or possibly to an uncertainty on the part of the new teacher as to the correct procedure desired. On the other hand, the lower scores may have been the result of an emotional upheaval due to a change in the regular daily routine to which children look for security of action. Or it may have been the result of a combination of all factors. However, it is notable that the class gradually assumed its normal assurance, and concurrently, its former normal scores.

Much of the difficulty evidenced by the pupils seemed to derive from an insecurity in thinking the syllable names of the tones heard. For this reason, they were handicapped in reproducing accurately on staff-lined paper that which they could not definitely account for. It was suggested to teachers that they try occasional drill problems with actual singing of the syllable names by the class, to be followed by the writing of the same. It was advised, however, to make this procedure only temporary, or intermittent, as the continued use of such a practice would not develop the "mental ear", or induce maximum individual effort. It was recommended, however, that if time permitted, the class might sing what they had written

in the drill period after it was written. By using the latter procedure, pupils might discover their own mistakes.

Testing time, for two problems at each visit, consumed at least fifteen minutes during the first two months, but was later reduced to about twelve minutes for each testing period. This was a greater amount of time consumed than was anticipated. Much of this time was expended in making sure that the proper key signature was made, and that the correct location of "Do" was understood.

It was unavoidable that, in such a lengthy project of this kind, absenteeism might occur among some of the pupils, because of illness or for many of the reasons that children do not come to school. The computation of the class median and the class mathematical mean was, in each case, determined by the number of pupils present on the particular day of the test, and not by a division of total enrollment.

Stimulus, throughout the dictation series, was given to pupils to compose original melodies for their own satisfaction. These pupils were encouraged both by being provided with a supply of staff-lined paper and with an offer of constructive help in their endeavor. Suggestions were made to seek out short poems which might be set to music, but no move on the part of the teacher was made to procure the poems for the children. It was felt that if the pupils were sufficiently interested, and were given the source, they would seek out the

texts for themselves. Quite a number of pupils engaged in this bi-product activity, though the resultant melodies did not always fit the words chosen. Never-the-less, interest was created toward creative expression, and it is felt that the seed will grow, to blossom later, perhaps, in a future year.

Teacher comments

Comments from classroom teachers involved in the dictation project were invited, with a request that those teachers be perfectly frank in their evaluation of the enterprise. It was felt that the teachers, being closely associated with the pupils from day to day, would be in an advantageous position to uncover any undesirable characteristics of the project, and could also recommend many of the desirable features. It was requested, however, that any comments offered should be in writing, and that they be dated at the time the comment was considered appropriate. The affixing of the date to each comment was for the purpose of judging how weaknesses in class or individual response might improve with continued practice. The comments listed below were submitted in good faith, and are herewith reproduced as they were received, except where editing was necessary to combine similar comments by more than one teacher.

(November). Grade Four should have more orientation in the simple manipulation of note-making and similar skills, preliminary to such a course in music dictation. This orientation could be carried out in a previous grade. I suggest that "note-tracing" be tried, similar to the process of letter-tracing used in Grade One.

(November). The drill problems are too long, and the music period time allotment did not allow for completion of all the drill material. A compromise was made by dictating only half of some exercises.

(November). The children appear to enjoy the project, seem eager to try their skill, and especially like going to the blackboard while others work at their desks.

(November). The dictation project reduces the amount of time which might be devoted to actual note-reading, or for remedial tone-drill. For that reason, I feel that the quality of the singing suffers.

(December). The children appear to have difficulty in the rudimentary procedure of writing simple notes on the correct lines and spaces of the staff. I would suggest that, before starting the dictation project, a period of two weeks

be devoted to daily drill in the rudimentary procedure of writing the various note-values which would later be met in the dictation. Rhythmic exercises, also, on a single tone might be of benefit. The class would thus be prepared to recognize the various note-values when they heard them in the dictation exercises. In other words, let mastery of note-writing precede the dual task of recognizing pitch and rhythm.

(January). I feel very dissatisfied with the results of the tests in proportion to the time devoted to them. I think that, if this program were inaugurated in only one grade at first, then carried through by adding the succeeding lower grade each year, it would be more fruitful. Starting in all grades at one time, even though with varying material, presupposes a training which has not been given.

(January). The dictation project appears to stimulate powers of concentration, which reflect in increased alertness and attention when the children are reading from their regular song books.

(January). I do not feel that the dictation is as effective as short oral tone-drill used in conjunction with song material. I prefer to solve melodic and rhythmic problems as they arise in the songs. In this way, a functional purpose is being served.

(January). I like the dictation project, and feel that it is giving the children something of value.

(February). Many of the mistakes made by the children were the result of careless reproduction of the tones heard. During the daily drill, the children would be questioned as to what particular tone, or tones, they heard. Almost invariably they would give the correct answers. Yet when the written versions were completed, the tones were not represented on the correct staff lines or spaces. That is, if the ascending tone-sequence were "do-mi-sol", the pupils might tell you the correct syllable names of the tones, but might actually write such a version as "do-re-mi". This lack of reasoning procedure was also evident in the bi-weekly test results.

(February). The dictation project appears to give the children a more secure conception of tonal skips, when reading in their song books. By recognizing the skip of a third when

it has been heard, they are better prepared to sing the third when it is required in their song books. To put it differently, when they hear the tonal skip, they visualize its position on the staff; conversely, when they see the printed skip, they hear it inwardly.

(April). I feel that the project took a greater proportion of time than was justifiable in relation to the results received. A less intensive course in dictation might still have produced desirable results.

(April). By being required to write the correct scale-tones, the children became more rhythmically precise, as well as more melodically keen, when they transferred their techniques to reading from the song books.

(April). The project served as a desirable drill-tool in learning to recognize scale tones, and their relationship to each other. It further developed a keener discrimination for pitch differences.

(April). There was very obvious high interest among the pupils, especially in receiving their corrected papers back, to see if any improvement had been made.

(April). The dictation helped to stimulate, and give impetus to, creative writing of little songs by the children. Often this writing was of a spontaneous nature, such as "rainy-day" writing on the blackboard, or "spare-time" activity at their desks.

(April). The dictation project was an excellent instrument for stimulating concentration. The recorded results, on staff-lined paper, were often an indication of concentrative powers as much as that of musical skill. However, caution should be exercised in precariously assuming a pupil to be delinquent in mental powers merely because he experienced difficulty in hearing the melodies correctly. Inability to discriminate in tonal differences should not be construed to indicate lack of mental ability.

(April). Those pupils who met success in the dictation project expressed a liking for the activity. Those who experienced difficulty said they did not like it.

(April). The total attitude toward the singing program has improved, when the children found that the dictation project had helped them to read the notes more readily, and that they were better equipped to cope with tonal problems found in their songs.

(April). The testing program in the project was a good instrument for measuring individual progress. In classroom singing, a pupil will receive unsolicited audible assistance from his classmates, a help which will aid him in solving problems in the songs. But the dictation project was an individual affair, and each pupil was required to do his own work. Since he could depend on no help from his neighbors, the pupil had to stand on his own initiative. Therefore, the scores received were an indication, in most cases, of each child's musical progress.

(April). Occasionally, a pupil who is having difficulty in other school studies will meet success in the music dictation project. This success may be due to a particular talent for hearing musical sounds accurately; or it may be that, because he finds that he can do well in dictation, he tries harder for this than for his other school studies. However, I find that, for the most part, pupils who are slow in other school subjects are likewise slow in grasping the dictation problems. The mentally alert child will similarly, in most cases, do well in the dictation project.

(April). Some pupils are showing a definite improvement in their music reading ability, no doubt a result of the dictation project. However, if the same amount of time were

devoted to actual note-reading in song material, equal progress might have been made. I believe that a more accurate judgment of reading progress requires more than one year of the experiment.

(April). I feel that the pupils have gained much in mechanical skill, both in note-writing and in note-reading, but have lost valuable time for enjoyment and appreciation. This is especially true of those who, because of retardation or excessive age, will not continue schooling past grade school.

(April). Among the bi-products of the dictation project was a knowledge gained concerning the correct placement of the sharps and flats on the staff. Since the structure of key signatures was not formally taught, the pupils must have acquired the knowledge through daily observation in the drill material.

(April). The dictation project is time-consuming. I do not feel that there is sufficient carry-over into the reading program to warrant the amount of time spent on the dictation. This is especially true in my case, where we have a departmental system permitting only two scheduled music periods each week.

(April). The dictation problems seemed to increase in difficulty too fast, which made it hard for pupils to show an improvement in the test scores. If a more gradual approach to difficult problems were developed, pupils might show corresponding higher scores.

(April). Since pupils were required, after placing the sharps and flats on the staff, to designate the location of "Do", the project served as a supplementary drill-tool in the finding of "Do" from the key signature. It also served as supplementary drill in recognizing melodic and rhythmic problems.

(April). As the dictation program progressed, it seemed that the children gained in facility in the reading of songs from their regular song books. This greater ease in music reading, without doubt, was an outgrowth from practice in writing notes which corresponded to actual sounds heard. There seemed to be less "stumbling", with a resultant smoother, rhythmical reading. It was, moreover, an excellent experience in ear-training.

(April). The project seemed to be confusing to two types of pupils, namely: the slow-thinking child, and the tonally-deficient child. However, the experience tended to

capture their interest, and to make them more alert. I did not find that pupils became discouraged, or wanted to "give up" because of difficulties in the dictation.

(April). I believe that the dictation project might be more effective if started in Grade Three, where it would develop early concentration on the corellation of sound and its written symbol.

(April). The amount of drill material furnished is lengthy, and sufficient to cover the needs of even the most capable classes, or individuals. It may not be necessary to use all the suggested material. The amount used would depend upon the ability to absorb of that particular class to which the problems are being presented. The skillful teacher must be alert to the needs of her class, and provide remedial material as the situation requires. The alert classes should be given the opportunity to achieve as much as they are able to master, with continued interest. This dictation project, if used with discretion, may be a challenge to all types of pupils.

(April). I think that there should be a long period of preparation before attempting the standard of work presented in this dictation project. Such information as

names of lines and spaces, note-names and values, and the placement of the sharps and flats on the staff should be mastered before attempting any formal exercise writing. Immediate preparation for writing exercises should be, perhaps, in the form of "fun-games" at the blackboard (writing three or four notes only), and in "singing-back" games (the teacher sings a few tones, the pupils sing syllable names back).

(April). I believe that maximum progress would result, in a project of this kind, where singing groups are selected for musical proficiency and interest. Where such is the situation, the dictation project could be used as a stimulation to greater achievement, and a challenge to musical skill.

Re-test of all groups for music reading ability

When the dictation project was completed, both the control and the experimental groups were re-tested individually for music reading improvement. The same standard of measurement was used to evaluate reading ability as was indicated in the preliminary music reading test, namely:

1. Good readers made not more than one mistake.
2. Average readers made not more than two or three mistakes.
3. Poor readers gave confused performance.

The following graphs will indicate the reading levels into which the pupils were classified. In order to compute the number of pupils who showed improvement in reading ability, the following procedure was used:

1. A reduction in the number of poor readers would indicate reading improvement.

2. An increase in the number of good readers would indicate reading improvement.

3. It would not be necessary to account for the numbers in the "average" group, since that classification served as a medium for receiving improved readers from the lower group, and served also as a source of supply for the higher group. For that reason, only the changes in number

of the "good" and "poor" were considered.

When it was determined how many pupils had made improvement in music reading ability, in both the experimental and control groups, a proportionate percentage of the class who had improved was computed by dividing the number of improvements by the total number of pupils in each respective grade. A total average improvement for each entire grade section, that is, the combined groups of each experimental grade as against the combined groups of each control grade, was computed by dividing the sum of the proportionate improvement percentages by the number of classes tested. (Three in each grade).

Results of the Reading Tests

Grade Four

Experimental Group A

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	9	13	4
Average	11	8	
Poor	8	7	1
Total	28	28	5

Proportionate improvement: 18%

Control Group A

Preliminary reading test	Final re-test	Number making improvement
6	8	2
4	5	
6	3	3
16	16	5

Proportionate improvement: 31%

Experimental Group B

Reading ability	Preliminary reading rest	Final re-test	Number making improvement
Good	9	13	4
Average	12	9	
Poor	8	7	1
Total	29	29	5

Proportionate improvement: 17%

Control Group B

Preliminary reading test	Final re-test	Number making improvement
6	6	0
3	4	
7	6	1
16	16	1

Proportionate improvement: 6%

Experimental Group C

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	11	13	2
Average	6	11	
Poor	12	5	7
Total	29	29	9

Proportionate improvement: 31%

Control Group C

Preliminary reading test	Final re-test	Number making improvement
5	8	3
13	12	
8	6	2
26	26	5

Proportionate improvement: 19%

Average improvement:
Experimental Groups (Grade Four): 22%
Control Groups (Grade Four): 19%

Results of the Reading Tests
Grade Four
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Results of the Reading Tests

Grade Five

Experimental Group A

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	11	18	7
Average	13	8	
Poor	4	2	2
Total	28	28	9

Proportionate improvement: 32%

Control Group A

Preliminary reading test	Final re-test	Number making improvement
11	12	1
8	7	
5	5	0
24	24	1

Proportionate improvement: 4%

Experimental Group B

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	11	14	3
Average	8	10	
Poor	9	4	5
Total	28	28	8

Proportionate improvement: 29%

Control Group B

Preliminary reading test	Final re-test	Number making improvement
7	8	1
6	5	
4	4	0
17	17	1

Proportionate improvement: 6%

Experimental Group C

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	19	19	0
Average	3	14	
Poor	14	3	11
Total	36	36	11

Proportionate improvement: 31%

Control Group C

Preliminary reading test	Final re-test	Number making improvement
12	15	3
13	13	
11	8	3
36	36	6

Proportionate improvement: 17%

Average improvement:
Experimental Groups (Grade Five): 31%
Control Groups (Grade Five): 9%

Results of the Reading Tests
Grade Five
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Results of Reading Tests

Grade Six

Experimental Group A

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	10	16	6
Average	13	9	
Poor	4	2	2
Total	27	27	8

Proportionate improvement: 30%

Control Group A

Preliminary reading test	Final re-test	Number making improvement
1	2	1
5	4	
3	3	0
9	9	1

Proportionate improvement: 11%

Experimental Group B

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	10	11	1
Average	8	7	
Poor	7	7	0
Total	25	25	1

Proportionate improvement: 4%

Control Group B

Preliminary reading test	Final re-test	Number making improvement
15	16	1
9	8	
4	4	0
28	28	1

Proportionate improvement: 4%

Experimental Group C

Reading ability	Preliminary reading test	Final re-test	Number making improvement
Good	11	15	4
Average	11	7	
Poor	5	5	0
Total	27	27	4

Proportionate improvement: 15%

Control Group C

Preliminary reading test	Final re-test	Number making improvement
12	12	0
10	11	
5	4	1
27	27	1

Proportionate improvement: 4%

Average improvement:
Experimental Groups (Grade Six): 16%
Control Groups (Grade Six): 6%

Deductions

A study of the charts which tabulate improvement in music reading ability will show many interesting factors. The most obvious factor is that pupils in both the experimental and control groups have shown some improvement in music reading ability, though the greater total improvement is recorded by the experimental groups. The experimental groups, with the exception of one sixth grade, all made a recorded improvement in excess of 15%, the maximum score being 32% improvement. Several units of the experimental groups showed improvement approaching that maximum score. Of the control groups, one unit showed a high total improvement of 31%, though five of the nine control groups showed only 4% to 6% progress.

However, it must be remembered that the control groups had not been idle, nor had they been deprived of music reading practice. The control groups were engaged throughout the year in normal music reading activity, while the experimental groups, being engaged in the dictation project, were actually restricted in their music reading activity due to a reduced time allotment caused by the inclusion of the dictation experiment. However, at the close of the experimental period, total average improvement for each grade was greater in the experimental groups than in the control groups. Exceptions will be found in several of the individual group units.

The most significant indication of music reading improvement will be found in Grade Five, where there is a total average improvement of 31% for the experimental groups, as against 9% for the combined control groups. Not only is the total average of improvement greater for the experimental groups, but it is shown also that each unit of the experimental group made improvement in excess of that achieved by the control units. It is obvious that Grade Five responded to the dictation project to their profit, exceeding by 22% the score for music reading improvement made by the control group in Grade Five.

Grade Four, as a whole, made significant improvement in reading ability in both the experimental and control groups. However, Control Group A, being a small grade in a combined classroom situation, was aided materially by the improvement of five of its members, which would account for the very high percentage of improvement in that unit. All units of the experimental group in Grade Four made consistent advancement, although the total average improvement for the experimental groups was only 3% higher than that made by the control group. It might be assumed that more preliminary orientation in staff dictation might be necessary if results in the reading tests are to compare favorably with those made by Grade Five.

In Grade Six, there was a total improvement of 10% made by the experimental group in excess of that made by the control

group. Experimental Group A showed the greatest amount of improvement, making a total improvement of 30% as against its nearest competitor, Control Group A, a small class, which made only 11% improvement. It is notable that Experimental Group B made very little improvement in music reading ability, comparable to that made by Control Groups B and C. It is evident that Experimental Group B did not respond to the dictation project, and was not benefited by its experience.

It is significant to note that the units which experienced most difficulty in the dictation project, namely Experimental Groups Six B, and Six C, also recorded the lowest scores for music reading improvement. Those experimental groups which achieved the highest scores for music reading improvement, namely Four C; Five A, B, and C; and Six A, showed also the highest scores in the dictation project. It is logical to assume that success in the dictation project might indicate probable reading improvement. As far as the results of this survey are concerned, such is the indication.

Conclusion

A well-organized course in the dictation of music may become a stimulating and valuable teaching aid to music reading, supplementary to, and augmenting the practice of note-reading from the song-book. The skillful use of dictation material can result in at least a 32% increase in music reading ability, as is shown in the results of the music reading tests, and it is probable that, if the course is to be further carried on as a permanent music activity, the results may be even more gratifying. Not all classes will benefit to the maximum degree, nor will all individuals be aided materially by their experience with music dictation. Grade units, and individuals, will respond to the dictation project with varying degrees of success, but its use will do none any harm. The benefits accrued may even far out weigh any possible damage to the interest of even the slowest, or non-musical child.

However, music education does not depend upon one teaching aid alone. And there are many ways of teaching music reading. Skillful teaching is, and has been, going on in our public school systems for many years. A study of the music reading test charts in this thesis will show that several of the control units, those who were not exposed to the dictation project, made commendable progress in music reading during the year. Thus we note that the worthy teacher will stimulate

learning, where it is possible, in her own way according to the conditions under which she is working. However, the results of this survey show that even better progress in music reading can be made through the use of music dictation.

It has been inferred, in one or two of the sections under "Teacher Comments", that pupils might improve their music reading skill equally well if the same amount of time given to the dictation project would be devoted to actual note reading. That may, or may not, be true. The results of this survey do not support the contention. Moreover, an excessive amount of time devoted solely to note-reading can be dulling and discouraging to the child. It is just such excessive drill on note reading which has been so injurious to the music programs of the past. Music educators should always be alert to the possibility of reaching the interest of the child through as many various channels as possible. The inclusion of a course in music dictation may be one means of stimulation toward better music reading habits.

A challenge to greater effort on the part of the child must be achieved by a stimulation of his interest for that particular activity upon which he is engaged. Throughout the course of this dictation project, one of the most noticeable reactions on the part of the children was a very evident show of interest, and a concentrated attention upon the task at hand.

The children would listen most intently for the melody to be sung, then when they were instructed to write what they had heard, they went to work with astonishing zeal. Teachers who enjoy seeing children apply themselves wholeheartedly to the task at hand would receive great satisfaction in watching how earnestly the pupils strove to do their best. Many teachers who were engaged in the project commented often that they were amazed to find that such concentrated effort could be induced from even their slowest pupils. Since the ability to concentrate upon the problem of the moment is prerequisite to successful learning, it would appear that a direct bi-product of the dictation project might be the stimulation of the powers of concentration.

As has been shown, all classes, or all individuals, do not benefit equally from being exposed to a course in the dictation of music as carried out in this survey. Needless to say, a course in music dictation will not cure the music reading deficiencies of every group, nor will it stimulate every individual to greater effort. There are as many proportionate differences in groups as there are individual differences among pupils. A project which will stir one group to increased endeavor may not catch the imagination of some other group of children. However, the music educator who is alert will be responsive to the needs of each group. He will attempt to diagnose the difficulties of each group, as the difficulties

arise, and administer remedial procedures, much as a wise doctor will study each patient, diagnose the ailment, and prescribe a cure. If the initial prescription does not work, the doctor will alter the remedy in an effort to cure the patient. Such a procedure is not without its parallel in the field of music education. If, after a fair trial, a course in music dictation does not induce better music reading ability in some particular class, the music educator should revert to some other means of procedure. In any case, wise teaching, a sympathetic and enthusiastic attitude on the part of the teacher, and a responsive attitude on the part of the pupils should encourage desirable results.

Abstract of the Thesis

The purpose of this thesis is to show that music reading ability may be aided by the use of music dictation. To achieve the proof of the statement, nine units were selected to become the experimental group, and nine other units of comparable reading ability were retained to comprise a control group. Of the nine units in the experimental, and control groups, three units were selected from Grade Four, three units from Grade Five, and three units from Grade Six.

In order to select, and pair off, these single units of each grade according to comparative reading ability, for experimental purposes, all groups were given a preliminary music reading test. Individuals in all groups were tested for note reading ability, using unfamiliar, moderately easy music material. Pupils were classified as follows:

1. Good readers made not more than one mistake.
2. Average readers were allowed two or three mistakes in note reading.
3. Poor readers gave a confused performance, and had to be helped to continue.

When all units of Grade Four, Grade Five, and Grade Six had been tested for music reading ability, those units of each grade which were considered fairly equal in music reading ability were paired off: three units of each grade being paired with three units of the same grade. Those units of each grade

which were to serve as the control group were allowed to continue in their normal music activity. Those units of each grade which were selected to serve as the experimental group were given preliminary instruction in the process of music dictation.

Classroom teachers served willingly in the development of the thesis proposal, and were kept informed as to the results of their particular grades at all times. Adequate drill material was supplied to the teacher, and daily dictation problems were given by the teachers to the pupils. In the daily drill, teachers proceeded according to definite instructions and recommendations, in a manner similar to that followed by the test-administrator in his bi-weekly visits to the classroom. Teachers were not, however, expected to correct all the daily drill material. A check on individual daily work could be made by having several pupils work simultaneously at the blackboard. The teacher could thus select one correct version from the blackboard, and ask the pupils to compare their own work, and to find their own mistakes.

Test problems in music dictation were administered by the writer of this thesis during his regular bi-weekly visits. The test material followed closely, but did not duplicate, the daily drill material. Procedures in giving the dictation test material, however, did follow the pattern as recommended to the classroom teacher. Following the administration of each bi-

weekly test in music dictation, the papers were corrected for errors, the papers graded, the scores recorded, and the papers returned with individual comments designed to aid and encourage the pupils to greater facility in music dictation. Teachers were also provided with a bi-weekly score-chart, showing the class median, and the class mathamatical mean. Teachers could thus chart the total progress of their own grades.

During the continuation of the dictation project, teachers were invited to make comments upon the value of the experiment, and to observe any reactions, either favorable or unfavorable, on their own part or on the part of the children. It was requested, however, that these comments be written, and dated, in order to show whether or not early comments and observations coincided with those made at a later date. A sizable number of comments were received, many favorable, some unfavorable to the project. The comments were faithfully included in the thesis, since it should be important to note the reactions of those who were closest to the children, even though some comments might be proved in-valid when later music reading tests were administered. The writer of this thesis also made his own observations and comments during the twenty school weeks covered by the dictation project.

At the termination of the dictation project, all individuals of both the experimental and control groups were re-tested

for music reading ability, following the same procedure as that used in the preliminary reading tests. Charts constructed to show the results of these music reading tests show several significant factors:

1. Some units in both groups, experimental as well as control, showed reading progress.

2. The experimental groups, as a whole, showed greater music reading progress.

3. Several experimental units made outstanding music reading progress (29%--32%).

4. Grade Five seemed to benefit most from the dictation project, and showed the greatest progress in music reading ability.

5. Some experimental groups made very little progress.

6. One control unit made significant progress.

7. The experimental units made greater progress in music reading than did the control units, in some cases an excess of 23% to 28% over the corresponding unit of the control group.

The conclusion portion of this thesis observes that a project in music dictation can become a teaching device for the betterment of music reading ability. Not all groups, or all individuals, will react favorably to the project. Generally speaking, however, the use of a project in music dictation will aid materially toward better music reading ability, and its use will do none any harm. The music educator is urged to use any

device, and many devices, to aid his pupils to greater ability in music reading. Music education must not be limited to one teaching medium. A project in music dictation can be used as one of many such teaching tools. The music educator is urged to study each of his school groups, and to recommend remedial measures, according to the needs of the group.

Bibliography.

In a search for guidance in the construction and administration of this project, no similar material could be discovered which would proceed in the manner desired by the writer of this thesis. All melodies used for the dictation drill and tests are original, and are based on the background and needs of the groups concerned. It is very probable that the material so constructed would not meet the needs of some other group. However, the experiment was carried out in its entirety, as shown.

While many books on music education formed a background for the preparation of the thesis, no direct quotations were used in its preparation or procedure. It is felt that, since the thesis is essentially original in nature, the inclusion of the usual bibliography would not be appropriate in this instance. For that reason, the lack of a formal declaration of a bibliography is explained.

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